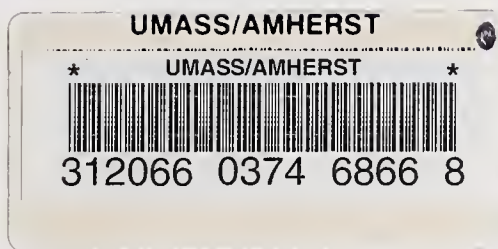


MASS. EA20.2: W33/DRAFT/996




**REVISIONS TO
THE MASSACHUSETTS CONTINGENCY PLAN,
310 CMR 40.0000**

PUBLIC HEARING DRAFT

November 1, 1996

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Section 1

Revisions to Implement VPH/EPH Methods for Characterizing Petroleum Releases:

- A. Definitions and Notification Provisions
- B. Numerical Standard and Reportable Concentrations

SECTION 1: REVISIONS TO IMPLEMENT VPH/EPH METHODS

Note to Reviewers: the following revisions to the definitions section, 310 CMR 40.0006; the notification requirements in 310 CMR 40.0360; and the reporting thresholds and cleanup standards are intended to implement DEP's new Volatile Petroleum Hydrocarbon (VPH) and Extractable Petroleum Hydrocarbon (EPH) toxicological approach and associated analytical methods for characterizing petroleum hydrocarbon releases.

Please note that Total Petroleum Hydrocarbon (TPH) cleanup standards and Reportable Concentrations have been retained for optional use at sites impacted by releases of heavier-molecular-weight petroleum products, such as fuel and lubricating oils. Retaining the TPH standards and Reportable Concentrations will provide parties the continued ability to directly compare old TPH data to reporting and cleanup levels, as well as to facilitate the future use of inexpensive testing methods to screen out sites with low levels of petroleum contamination. To redefine TPH in this manner, and on the basis of new toxicological information obtained from the VPH/EPH efforts, however, it will be necessary to lower the TPH groundwater standards to make these standards consistent with MCP's existing No Significant Risk limits.

40.0006: continued

Aliphatic Hydrocarbon Fraction means C₅ through C₈ Aliphatic Hydrocarbons, C₉ through C₁₂ Aliphatic Hydrocarbons, C₉ through C₁₈ Aliphatic Hydrocarbons, and C₁₉ through C₃₆ Aliphatic Hydrocarbons.

Aromatic Hydrocarbon Fraction means C₉ through C₁₀ Aromatic Hydrocarbons and C₁₁ through C₂₂ Aromatic Hydrocarbons.

C₅ through C₈ Aliphatic Hydrocarbons means the cumulative concentration of all aliphatic hydrocarbon compounds with boiling points greater than 36°C and less than 150°C, as measured by chromatographic methods approved by the Department or equivalent procedures, excluding the individual compounds listed at 310 CMR 40.0974(2).

C₉ through C₁₂ Aliphatic Hydrocarbons means the cumulative concentration of all aliphatic hydrocarbon compounds with boiling points equal to or greater than 150°C and less than 217°C, as measured by chromatographic methods approved by the Department or equivalent procedures, excluding the individual compounds listed at 310 CMR 40.0974(2).

C₉ through C₁₈ Aliphatic Hydrocarbons means the cumulative concentration of all aliphatic hydrocarbon compounds with boiling points equal to or greater than 150°C and less than 330°C, as measured by chromatographic methods approved by the Department

or equivalent procedures, excluding the individual compounds listed at 310 CMR 40.0974(2).

C₁₉ through C₃₆ Aliphatic Hydrocarbons means the cumulative concentration of all aliphatic hydrocarbon compounds with boiling points equal to or greater than 330°C and less than 500°C, as measured by chromatographic methods approved by the Department or equivalent procedures, excluding the individual compounds listed at 310 CMR 40.0974(2).

C₉ through C₁₀ Aromatic Hydrocarbons means the cumulative concentration of all aromatic hydrocarbon compounds with boiling points greater than 169°C and equal to or less than 218°C, as measured by chromatographic methods approved by the Department or equivalent procedures, excluding the individual compounds listed at 310 CMR 40.0974(2).

C₁₁ through C₂₂ Aromatic Hydrocarbons means the cumulative concentration of all aromatic hydrocarbon compounds with boiling points greater than 218°C and equal to or less than 525°C, as measured by chromatographic methods approved by the Department or equivalent procedures, excluding the individual compounds listed at 310 CMR 40.0974(2). [Note to Reviewers: this fraction has previously been identified by DEP as "C10 through C22 Aromatic Hydrocarbons"; the change here is only in terminology, and there is no substantive change in the analytical or toxicological definition of this fraction.]

Total Petroleum Hydrocarbons and TPH each means the total or cumulative concentration of hydrocarbons with boiling points equal to or greater than 150°C (C₉) and associated with a petroleum product, ~~with a gram molecular weight equal to or greater than 140 (C₁₀),~~ as measured by standard analytical techniques and/or by procedures approved by the Department, excluding the individual compounds listed at 310 CMR 40.0974(2). ~~including, but not limited to, procedures approved by the Department that express TPH as a weighted average of individual constituents.~~

40.0360: Reportable Concentrations for Oil and Hazardous Material

(1) A release indicated by the measurement of oil and/or hazardous material in soil and/or groundwater requires notification to the Department under the provisions of 310 CMR 40.0315 if the measured concentration of one or more listed substance in 310 CMR 40.1600 in any soil or groundwater sample is equal to or greater than the media and category-specific Reportable Concentration value listed at 310 CMR 40.1600 in effect on the date of the sample analysis.

(2) Except for gasoline, kerosene, and aviation fuel, the Reportable Concentration for the oils listed at 310 CMR 40.1600 shall be the Reportable Concentration established in 310 CMR 40.1600 for Total Petroleum Hydrocarbons (TPH) or the Reportable Concentrations established in 310 CMR 40.1600 for the Aliphatic Hydrocarbon Fractions and/or Aromatic Hydrocarbon Fractions which comprise these products. Notification shall not be required for sites solely on the basis of a measurement of TPH equal to or greater than an applicable Reportable Concentration if data exists demonstrating that concentrations of the Aliphatic and Aromatic Hydrocarbon Fractions comprising the TPH are less than the applicable Reportable Concentrations established in 310 CMR 40.1600.

(3) The Reportable Concentration for gasoline, kerosene, and aviation fuel shall be the Reportable Concentrations established in 310 CMR 40.1600 for the Aliphatic and Aromatic Hydrocarbon Fractions which comprise these products.

~~For the purpose of determining whether a notification obligation exists under 310 CMR 40.0315, the applicable TPH Reportable Concentration shall be compared to concentrations of TPH measured in soil or groundwater samples by standard analytical techniques or by analytical procedures recommended by the Department.~~

(43) The Reportable Concentration values for the hazardous materials listed at 310 CMR 40.1600, including hazardous materials that may be components of oil or waste oil, shall be compared to concentrations of hazardous material in soil or groundwater that have been measured by the analytical procedures detailed in EPA Publication SW-846, "Test Methods for Evaluating Solid Waste", or any other appropriate analytical procedure, as described in 310 CMR 40.0018, and where there is greater than a 95% probability that the reported analyte is present at or above the Reportable Concentration.

(54) The techniques utilized for obtaining soil and groundwater samples for comparison to the Reportable Concentration values listed at 310 CMR 40.1600 shall be in conformance with generally accepted practices and procedures, consistent with the Response Action Performance Standard described in 310 CMR 40.0191, and shall not involve measures or steps that are undertaken to cause or promote the dilution of analyte

values for the sole purpose of avoiding reporting obligations imposed in 310 CMR 40.0315.

(65) Persons notifying the Department of a release under the provisions of 310 CMR 40.0315 and 40.0360 through 40.0369 shall specify whether the measured concentration of one or more of the listed substances in 310 CMR 40.1600 constitutes a release of oil, hazardous material, or both oil and hazardous material. Such a determination shall be based upon:

- (a) factual evidence relating to the source and mechanism of the release;
- (b) factual evidence relating to the storage, use and disposal of oil and hazardous material at the site of the release; and/or
- (c) analytical characterization of the release.

Section 2

DEP Tier I Site Downgrading Provisions

SECTION 2: DEP DOWNGRADE OF TIER IA SITES

Note to Reviewers: the following section is intended to clarify and to make express the Department's authority to re-classify a Tier IA site downward to Tier IB, Tier IC or Tier II. This provision should respond to the need presented, particularly by Transition Sites, for a Department mechanism to re-classify a site to better reflect the level of attention and oversight required from the Department. The Department's decision to downgrade a Tier IA site is not subject to an adjudicatory hearing, just as its decision to issue a Tier I permit in a category lower than that recommended by the applicant is not subject to an adjudicatory hearing [310 CMR 40.0050(8)(g)].

The Department believes the public should be notified of a decision to downgrade a site. We are seeking comments on what type of public participation in this decision should be provided.

40.0583: Department Reclassification of a Tier IA Site

(1) General. The Department may, on its initiative, reclassify a Tier IA site to a Tier IB, Tier IC, or Tier II site pursuant to 310 CMR 40.0583.

(2) Effect of Reclassification. A Reclassification made in accordance with 310 CMR 40.0583 shall have the effect of superseding the existing site classification.

(3) Criteria. The Department shall consider the criteria in 310 CMR 40.0730(1) when reclassifying a Tier IA site.

40.0584: Participation by the Public, RPs, and PRPs

(1) Prior to reclassifying a Tier IA site pursuant to 310 CMR 40.0583, the Department shall provide notice at least twenty-one (21) days prior to issuance of the Reclassification as follows:

- (a) by publishing a legal notice in a newspaper which circulates in the community(ies) in which the disposal site is located and in any newspapers which circulate in any other community(ies) the Department believes are likely to be affected by the disposal site;
- (b) by mail or hand delivery to the Chief Municipal Officer and Board of Health in the community(ies) in which the disposal site is located and in any other community(ies) which the Department believes are likely to be affected by the disposal site; and
- (c) by mail or hand delivery, to any person the Department reasonably believes:

1. is an RP or a PRP for the disposal site;
 2. is the permittee of the Tier IA disposal site;
 3. holds title to, or an ownership interest in any real property comprising the disposal site or which may be affected by the disposal site and whose name and address is known to the Department at the time the Department decides to re-classify the disposal site; and
 4. is the operator of the disposal site, if different from the owner;
- (d) if the disposal site is a Public Involvement Plan (PIP) site, by first-class mail to each person whose name and address appears on the PIP mailing list established pursuant to 310 CMR 40.1400; and
- (e) by first-class mail to the Chief Municipal Officer and local board of health of each community in which the disposal site is known to be located.

(2) Content of Notice. The notice required by 310 CMR 40.0584(1) shall include, but not be limited to, the following information:

- (a) a description of the location of the disposal site and the Department's proposed Reclassification;
- (b) the DEP Release Tracking Number(s), and the permit number;
- (c) the intended Reclassification category of the disposal site;
- (d) a description of the procedures by which persons interested in commenting may submit comments to the Department;
- (e) the deadline established by the Department for receipt of public comments; and
- (f) any additional information deemed by the Department to be relevant to the intended Reclassification.

(3) Procedures For Submission of Comments.

- (a) Within twenty-one (21) days, or within such other time period the Department determines is appropriate, after providing notice as required by 310 CMR 40.0584(2), any interested person may submit written comments to the Department. Such written comments shall be submitted to the Department by first-class mail or by hand delivery, during normal Department business hours.
- (b) The Department shall consider and respond as it deems appropriate to public comments submitted in accordance with 310 CMR 40.0584(3).
- (c) Upon reasonable request or on its own initiative, and with notice in accordance with 310 CMR 40.0584(1), the Department may extend the period for submission of public comments.

(4) Final Reclassification. Within a reasonable period of time after the close of the public comment period and any extensions thereof, the Department shall make effective the Reclassification and provide written notice of the Reclassification to all persons described in 310 CMR 40.0584(1)(c) 1. - 5. and (d) and to all persons who have submitted written comments pursuant to 310 CMR 40.00584(3) of the Department's Reclassification.

Section 3

Exemption from Transition Provisions

SECTION 3: EXEMPTION OF LTBI_s, UNCLASSIFIED DISPOSAL SITES, & NON-PRIORITY DISPOSAL SITES WITHOUT WAIVERS FROM THE TRANSITION REQUIREMENTS

Note to Reviewers: The Transition Requirements apply to over 4000 Locations to Be Investigated, Non-Priority Sites without Waivers and Unclassified Sites and have been in effect for over three years. These provisions require responsible parties to evaluate these locations and sites. The initial compliance rate with this 1995 transition deadline was only 40% despite Department efforts in 1993 and 1995 to remind parties of this requirement.

In spring 1996, DEP screened and prioritized locations and sites subject to the 1995 deadline to address the high noncompliance rate and set priorities for future enforcement. The Department decided to also screen locations and sites subject to the 1996 and 1997 deadlines. The screening sought to identify locations and sites not likely to warrant DEP enforcement, based upon available (and usually limited) information on release and site conditions. Non-priority and Unclassified Sites were screened out only when release conditions were below Reportable Quantities or Reportable Concentrations.

During this review, some sites/locations on the Transition List were found to not meet the MCP criteria for notification, or had been cleaned up, i.e., release conditions were below Reportable Quantities or Reportable Concentrations or low residual contaminant concentrations from an oil release remain based on field screening or analytical tests performed following response actions. Based on this criteria, 435 locations and sites, about 15% of the total number of sites/locations screened, were determined to be locations which would not require notification if reported today.

As a service those parties who reported releases that did not exceed current reporting conditions or who took response actions in the past prior to the development of MCP cleanup standards, the Department proposes exempting locations and sites screened out during the enforcement project from the MCP Transition Requirements. For those locations and sites subject to the August 2, 1996 deadline, DEP already issued a letter that it will forgo enforcement of the requirement to file an LSP Evaluation Opinion until regulations go into effect. For the locations and sites subject to the August 2, 1995 and August 2, 1997 deadlines, DEP plans to issue letters after the regulations have been promulgated sometime in early in 1997.

While locations and sites that meet DEP's criteria included releases that do not appear to exceed Reportable Concentrations, parties cannot assume that all locations and sites that meet the criteria meet MCP closure requirements. Rather than placing these locations and sites at the end of the MCP process, the Department intends that

they return to a pre-notification status. The proposed regulations require notification to the Department in the future should a reportable condition be discovered in the future.

40.0637: Exemption from Transition Requirements.

310 CMR 40.0637 establishes the requirements and criteria for determining that a Location to Be Investigated, Unclassified Disposal Site, or Non-Priority Disposal Site Without Waivers is exempt from the requirements of 310 CMR 40.0600, and describes the effect of the exemption.

(1) Applicability. The requirements and criteria set forth in 310 CMR 40.0637 apply to all Locations to Be Investigated ("LTBIs"), Unclassified Disposal Sites, and Non-Priority Disposal Site Without Waivers published on the 1993 Transition List and reviewed by the Department on or before August 9, 1996 pursuant to 310 CMR 40.0637.

(2) Effect. Any LTBI, Unclassified Disposal Site, or Non-Priority Disposal Site Without Waivers determined by the Department to meet the requirements of 310 CMR 40.0637 shall be exempt from the requirements of 310 CMR 40.0600. The exemption shall not eliminate any requirement to notify the Department pursuant to 310 CMR 40.0300 or to undertake response actions pursuant to 310 CMR 40.0370, if warranted.

(3) Criteria for Exempting LTBIs. In determining that an LTBI is exempt from the requirements of 310 CMR 40.0600, the Department, using information known to it on or before August 9, 1996, shall consider the following criteria:

- (a) past and current uses of the property;
- (b) any information indicating that a release or releases of oil or hazardous material has occurred or is occurring that would require notification to the Department pursuant to 310 CMR 40.0300;
- (c) response actions taken; and
- (d) any other information the Department deems relevant to its determination.

(4) Criteria for Exempting Unclassified Disposal Sites and Non-Priority Disposal Sites Without Waivers. In determining that an Unclassified Disposal Site or Non-Priority Disposal Site Without Waivers is exempt from the requirements of 310 CMR 40.0600, the Department, using information known to it on or before August 9, 1996, shall consider the following criteria:

- (a) past and current uses of the Site;
- (b) conditions at the Site, including but not limited to:
 - 1. type of location;
 - 2. type of release;
 - 3. concentration and/or quantity of the release; and
 - 4. effects upon soil and/or groundwater;
- (c) response actions taken at the Site such that concentrations/quantities of oil or hazardous material that may remain would not require notification to the Department pursuant to 310 CMR 40.0300; and

(d) any other information the Department deems relevant to its determination.

Note to Reviewers: the following changes to 310 CMR 40.0050 make express that the Department's decisions under either 40.0583 or 40.0637 proposed above are not subject to an adjudicatory hearing.

40.0050: Appeals Relative to Orders and Permits

- (8) The following determinations shall not be subject to an adjudicatory hearing:
- (a) a decision whether to issue an order pursuant to M.G.L. c. 21E, § 10;
 - (b) a decision whether to issue a Notice of Responsibility to any person pursuant to 310 CMR 40.0160(1);
 - (c) a decision whether to issue a Notice of Intent to Take a Response Action pursuant to 40.0160(2);
 - (d) a decision whether to issue a Request for Information pursuant to 310 CMR 40.0165;
 - (e) a decision whether to establish Interim Deadlines pursuant to M.G.L. c. 21E, § 3A(j) and 310 CMR 40.0167;
 - (f) a decision whether to list a Location to be Investigated or disposal site pursuant to M.G.L. c. 21E, § 3A(b) and/or 310 CMR 40.0168;
 - (g) a decision to issue a Tier I Permit pursuant to 310 CMR 40.0730 in a category lower than that recommended in the permit application;
 - (h) a decision whether to authorize site access pursuant to M.G.L. c. 21E, § 8, and 310 CMR 40.0173;
 - (i) a decision whether to develop an administrative record in accordance with 310 CMR 40.1300;
 - (j) a decision whether to audit a specific site to determine whether such site is in compliance with M.G.L. c. 21E, 310 CMR 40.0000, and any other law administered or enforced by the Department;
 - (k) a decision whether to initiate enforcement action against any person under M.G.L. c. 21E and/or 310 CMR 40.0000;
 - (l) a decision regarding a petition for reimbursement of costs under 310 CMR 40.1260;
 - (m) a decision whether to initiate Compliance Assistance under 310 CMR 40.1100;
 - (n) a decision whether to issue a Technical Assistance Grant;
 - (o) a decision upon administrative review of a demand for payment of Response Action Costs in accordance with 310 CMR 40.1220(3);
 - (p) any decision to suspend, revoke or refuse to renew any permit, authorization, approval, including, but not limited to, any Waiver of Approvals, or similar form of permission required by M.G.L. c. 21E and/or the MCP, where:
 - 1. DEP is expressly not required by the General Laws to grant a hearing; or
 - 2. DEP is required by law to take such action without exercising any discretion in the matter on the basis of a court conviction or judgment; or
 - 3. such action is based solely upon failure to file timely

reports, schedules or applications, or to pay lawfully prescribed fees;

(q) any decision contained in a Notice of Audit Findings at the conclusion of an audit, provided, however, that any Notice of Intent to Assess a Civil Administrative Penalty or order accompanying such notice or issued following issuance of a Notice of Audit Finding shall be subject to an adjudicatory hearing;

(r) any decision to designate one or more disposal sites or response actions as a Special Project in accordance with 310 CMR 40.0026; and

(s) any Reclassification of a Tier IA disposal site made in accordance with 310 CMR 40.0583;

(t) any decision to exempt a Location To Be Investigated, Unclassified Disposal Site, or Non-Priority Site Without a Waiver from the transition provisions of 310 CMR 40.0600 in accordance with 310 CMR 40.0637; and

~~(s)~~ (u) any other determination, decision, authorization or approval under M.G.L. c. 21E and/or 310 CMR 40.0000 for which an adjudicatory hearing is not required by M.G.L. c. 30A, unless expressly required by these regulations.

Section 4

Brownfields Revisions:

- A. "Remedy Operation Status" Proposal
- B. Changes to UCL/Response Action Outcome Requirements
- C. Random Audit Window Timeframe Change
- D. Notice to Public of Residual Contamination

SECTION 4A. "REMEDY OPERATION STATUS"

Note to Reviewers: as the MCP is currently written, a Permanent or Temporary Solution must be achieved at a site within five years of Tier Classification. As a result, for those sites where a permanent remedy has been implemented but No Significant Risk levels are not reached by the 5 year deadline, a Class C RAO/Temporary Solution must be filed at the 5 year mark. By statute, Temporary Solutions require "definitive and enterprising steps" to be taken to continue to look for a Permanent Solution (this requirement is implemented in the MCP at 310 CMR 40.0580, "Periodic Evaluation of Temporary Solutions at Tier I and Tier II Sites"). As part of the Brownfields discussions focussed on promoting the cleanup and reuse of contaminated properties, the application of the requirement to take "definitive and enterprising steps" to look for other remedies in those cases where a remedy designed to reach a permanent solution has been selected and is operating has been pointed to as an unreasonable requirement and one which creates financial uncertainty for lenders and potential buyers of properties where this ongoing Periodic Evaluation applies.

DEP agrees that the requirement to continue to look for other remedies in the case where a permanent remedy is already operating effectively is not reasonable. To address this concern, we are proposing revisions which would recognize sites that are pursuing a permanent remedy and no longer identify them as Temporary Solutions or require an evaluation of other remedies provided the selected remedy continues to operate and make progress toward a Permanent Solution. To implement this change, revisions which create a "Remedy Operation Status" in Phase V are proposed.

40.0890: Phase V - Operation, Maintenance, and/or Monitoring

310 CMR 40.0891 through 40.0899, cited collectively as 310 CMR 40.0890, contain the requirements and procedures for conducting Phase V and Post-RAO Operation, Maintenance and/or Monitoring activities at disposal sites.

40.0891: General Provisions

- (1) The provisions of Phase V shall apply to disposal sites where Phase IV response actions have been completed, a Response Action Outcome has not yet been achieved, and operation, maintenance and/or monitoring of the Comprehensive Remedial Action is necessary to achieve a Response Action Outcome under 310 CMR 40.1000.
- (2) Phase V activities may include the following:
 - (a) operation and maintenance of the Comprehensive Remedial Action;
 - (b) monitoring to evaluate the performance of the remedial systems and whether the Comprehensive Remedial Action is meeting its design specifications;
 - (c) monitoring of conditions at the disposal site to evaluate the effectiveness

of the Comprehensive Remedial Action in reducing, treating and/or containing oil and/or hazardous material;

(d) efforts to correct problems if performance monitoring indicates that the Comprehensive Remedial Action is not performing as designed; and/or

(e) documentation and submission of the results of operation, maintenance and monitoring activities to the Department, as described in 310 CMR 40.0892.

(3) Operation, maintenance and/or monitoring activities shall follow the OMM plan developed as part of the Remedy Implementation Plan in Phase IV under 310 CMR 40.0874(3)(d). The OMM plan shall be revised and updated as warranted in response to changes in site conditions, modifications to remedial systems, or as otherwise necessary to ensure that the Comprehensive Remedial Action achieves design standards and remedial goals.

(4) Inspection and monitoring results shall be documented and submitted to the Department in report form as described in 310 CMR 40.0892.

(5) Operation, maintenance and/or monitoring activities shall be performed at a frequency which is sufficient to ensure the effective performance and the integrity of the remedial action, consistent with the Response Action Performance Standard as described in 310 CMR 40.0191, and in conformance with the terms of applicable permits, approvals or licenses. At a minimum, information and data on operation and maintenance and/or monitoring conducted pursuant to this section shall be gathered and submitted to the Department every six (6) months in a report as described in 310 CMR 40.0892.

40.0892: Inspection and Monitoring Reports

Inspection and/or monitoring reports shall include, without limitation, the following:

(1) a description of the type and frequency of inspection and/or monitoring activities conducted;

(2) a description of any significant modifications of inspection and/or monitoring program made since the submission of the preceding Inspection and Monitoring Report;

(3) a description of any conditions or problems noted during the inspection and/or monitoring period which are or may be affecting the performance of the remedial action;

(4) a description of any measures taken to correct conditions which are affecting the performance of the remedial action;

- (5) the results of sampling analyses and screening conducted as part of the monitoring and/or inspection program; and
- (6) the name, license number, signature and seal of the LSP.

Note to reviewers: comments are sought in particular on the process for terminating Remedy Operation Status in 40.0893(5). Does the process provide parties with enough time/too much time to correct problems while maintaining the Status? Is the period of two years to reach either a Class A, B or C RAO after the termination of Remedy Operation Status too much/too little.

40.0893: Remedy Operation Status

- (1) Applicability. Remedy Operation Status applies to disposal sites where a remedial system which relies upon Active Operation and Maintenance is being operated for the purpose of achieving a Permanent Solution pursuant to 310 CMR 40.0890.
- (2) Performance Standard for Remedy Operation Status. To achieve and maintain Remedy Operation Status for a disposal site:
 - (a) the remedial system shall be adequately designed to achieve a Permanent Solution;
 - (b) a remedial system shall be operated, and maintained in accordance with the requirements of 310 CMR 40.0890;
 - (c) each source of oil and/or hazardous material shall be eliminated or controlled in accordance with 310 CMR 40.1003(5);
 - (d) any substantial hazard shall be eliminated; and
 - (e) at a minimum, information and data on operation and maintenance and/or monitoring shall be gathered and submitted to the Department every six (6) months in a report as described in 310 CMR 40.0892.
- (3) Content of Submittal. Remedy Operation Status shall be effective upon submission of a completed Remedy Operation Status Submittal. A complete Submittal shall include:
 - (a) a completed transmittal form established by the Department for such purposes;
 - (b) a Remedy Operation Status Opinion prepared in accordance with 310 CMR 40.0015 and 310 CMR 40.0893(2); and
 - (c) the certification required by 310 CMR 4.03.
- (4) Effect of Remedy Operation Status. At any site with Remedy Operation Status the deadline to achieve a Response Action Outcome within 5 years of the effective date of a Tier I permit or initial Tier II Classification as described in 310 CMR 40.0550 and 40.0560, respectively, shall not apply, provided the requirements of 310 CMR 40.0893 continue to be met.

(5) Termination of Remedy Operation Status.

(a) Remedy Operation Status shall terminate if:

1. the person providing the Remedy Operation Status Opinion fails to meet the requirements of 310 CMR 40.0893(2). Mechanical failure of the system and/or the need to undertake substantial system modifications shall not terminate Remedy Operation Status if written notice is provided to the Department in accordance with 310 CMR 40.0893(5)(b); or
2. the person providing the Remedy Operation Status Opinion notifies the Department in accordance with 310 CMR 40.0893(5)(c) that such person intends to discontinue operation of the remedial system upon which the Status is based;

(b) Any person having Remedy Operation Status who gains knowledge of information that the criteria in 310 CMR 40.0893(2) are no longer being met, including knowledge of a mechanical failure and/or need to substantially modify the remedial system, shall provide written notice to the Department in the form of a Status Report within 30 days of obtaining such knowledge. Notice shall include plans and a timetable to correct failures/initiate modifications of the remedial system. Remedy Operation Status shall terminate unless the remedial system is operating in accordance with 310 CMR 40.0893(2) within 120 days of providing such written notice or the timeframe of an Interim Deadline established by the Department;

(c) Any person who intends to discontinue operation of the remedial system on which the Remedy Operation Status is based shall provide written notice to the Department. Remedy Operation Status shall terminate upon the Department's receipt of such notice; and

(d) Any person conducting response actions at a disposal site where Remedy Operation Status has been terminated shall have two years from the date of the termination to achieve a Response Action Outcome.

40.08943 : Phase V Completion Statement

(1) Upon achievement of a Class A or Class C Response Action Outcome after conducting Phase V operation, maintenance and/or monitoring activities, a Phase V Completion Statement form, established by the Department for such purposes, shall be submitted with the final Phase V inspection and monitoring report to the Department.

(2) The Phase V Completion Statement form shall include:

(a) an Opinion from a Licensed Site Professional:
that:

1. specifies the Phase V outcome achieved as described in 310 CMR 40.0895;
2. except where operation, maintenance and/or monitoring are continuing under 310 CMR 40.0896, provides a description of residual oil and/hazardous material at the disposal site and any measures in

- place, including physical barriers and/or Activity and Use Limitations for preventing or limiting the exposure of human and/or environmental receptors to residual oil and hazardous material; and
3. except where operation, maintenance and/or monitoring are continuing under 310 CMR 40.0896, provides justification for terminating operation, maintenance and/or monitoring activities; and
- (b) a certification of the submittal required by 310 CMR 40.0009.

40.08954 : Public Involvement

- (1) Public Involvement Activities shall be conducted in accordance with 310 CMR 40.1400 through 40.1406. Public Involvement Activities relevant to Phase V specifically include, but are not limited to, 310 CMR 40.1403(3)(e) and (f).
- (2) If the disposal site where the Phase V is conducted is a Public Involvement Plan site, then a Public Involvement Plan that is consistent with 310 CMR 40.1405 shall be implemented.

40.08965: Possible Outcomes

- (1) Upon completion of operation, maintenance and monitoring activities under Phase V the following outcomes are possible:
- (a) the requirements of a Class A Response Action Outcome under 310 CMR 40.1000 have been met and no additional operation, maintenance and/or monitoring of the remedial action alternative is necessary to ensure the integrity of the RAO. A Class A Response Action Outcome Statement shall be submitted to the Department;
- (b) the requirements of a Class C Response Action Outcome under 310 CMR 40.1000 have been met and no additional operation, maintenance and/or monitoring of the remedial action alternative is necessary to ensure the integrity of the RAO. A Class C Response Action Outcome Statement shall be submitted to the Department; or
- (c) the requirements of a Class C Response Action Outcome under 310 CMR 40.1000 have been met, a Class C Response Action Outcome Statement has been submitted to the Department, and additional Post-RAO Operation, Maintenance, and/or Monitoring of the remedial action alternative under 310 CMR 40.0896 is necessary to ensure that the conditions upon which the Class C RAO is based are maintained and/or that further progress toward a Class A RAO is made.

40.08976: Post-RAO Operation, Maintenance and/or Monitoring

- (1) 310 CMR 40.0896 shall apply to any disposal site where:
- (a) a Class C Response Action Outcome Statement for a Temporary Solution under 310 CMR 40.1000 has been submitted to the Department; and

(b) the operation, maintenance and/or monitoring of the Comprehensive Remedial Action is necessary to ensure that the conditions upon which the Class C RAO is based are maintained and/or that further progress toward a Class A Response Action Outcome is made.

(2) Post-RAO operation, maintenance and/or monitoring activities may include the following:

- (a) operation and maintenance of the Comprehensive Remedial Action;
- (b) monitoring to evaluate the performance of the remedial systems and whether the remedial action is meeting its design specifications;
- (c) monitoring of conditions at the disposal site to evaluate the effectiveness of the remedial action in reducing, treating and/or containing oil and/or hazardous material;
- (d) efforts to correct problems if performance monitoring indicates that the remedial action is not performing as designed;
- (e) monitoring to confirm the long-term effectiveness of the remedial action in maintaining the Class C Response Action Outcome pursuant to 310 CMR 40.1000; and
- (f) documentation and submission of the results of operation, maintenance and monitoring activities to the Department, as described in 310 CMR 40.0892.

(3) Post-RAO operation, maintenance and/or monitoring activities shall be conducted in accordance with the requirements set forth in 310 CMR 40.0891 (3) through (5) and 310 CMR 40.0892.

(4) Periodic Evaluation of Temporary Solutions shall be conducted pursuant to 310 CMR 40.0580.

SECTION 4B. UCL AND RAO CHANGES (SUBPART I)

Note to Reviewers: the changes to 40.0933 emphasize that a building must be a *permanent building*, changing the regulatory term to "permanent buildings and structures." As a result of the nature of their construction, such buildings and structures prevent exposure to oil or hazardous material for long periods of time, although that is not their primary function (e.g. a municipal building which happens to be located over contaminated soil.) DEP seeks comments/suggestions which better differentiate such permanent edifices from ephemeral structures and barriers. DEP also seeks comment on whether "permanent buildings and structures" do, in fact, provide adequate long-term protection. Redevelopment -- including Brownfields development -- constantly takes place, resulting in the demolition, reconstruction and site disturbance.

40.0933 Identification of Applicable Soil Categories

(4) For the purpose of soil categorization, the potential for exposure is described by a qualitative analysis of the accessibility of the soil in combination with the information about the Site Activities and Uses determined pursuant to 310 CMR 40.0923. The following definitions shall be used to describe exposure potential for the purposes of categorizing soil:

...

(c) Accessibility of the soil to potential receptors shall be characterized as either "accessible," "potentially accessible," or "isolated" using the following criteria:

1. Soil shall be characterized as "accessible" if it is located less than three feet below the surface, and the surface is not completely covered by pavement. For buildings having earthen floors, the floor shall be considered as the soil surface.
2. Soil shall be characterized as "potentially accessible" if it is located at a depth of three - 15 feet below the surface (with or without pavement), or if the soil is located less than three feet from the surface in an area completely paved.
3. Soil shall be characterized as "isolated" if it is located at a depth greater than 15 feet below the surface, or if the soil is covered completely by a ~~building or other permanent structure~~ permanent building or structure which does not have earthen floors, regardless of depth. Soil located at a depth greater than three feet below the earthen floor of a ~~building or other permanent structure~~ permanent building or structure shall also be characterized as "isolated."

Note to Reviewers: the following change inserts the word "site" to correct a typographical error.

40.0993: continued

(4) The frequency, duration and intensity of exposure to each oil and/or hazardous material at the disposal site for each receptor at each Exposure Point shall be determined and documented, considering the current and reasonably foreseeable Site Activities and Uses identified for the disposal site. The magnitude of each receptor's total exposure to the oil and/or hazardous material at the disposal site is calculated in a manner which provides a conservative estimate of the potential exposures. Assessments conducted using a probabilistic analysis shall identify the 95th percentile estimate of each receptor's potential exposure.

Note to Reviewers: the following proposed changes modify the use of Upper Concentration Limits (UCLs) to characterize risk (and thus determine RAO category).

UCLs represent an upper bound to the site-specific flexibility allowed under Method 3 to determine site-specific cleanup requirements. The results of a Method 3 risk assessment are highly dependent upon assumptions about the foreseeable use of the site and surrounding area and rely heavily upon continuing obligations to control potential exposure. The Activity and Use Limitation (AUL) was developed to provide a reasonable mechanism allowing parties to leave behind elevated levels of OHM (as long as a level of no significant risk exists for the current site use and the site use remains unchanged.) Such controls can never be entirely effective in all cases, and an AUL is not a guarantee against future disturbance of contaminated areas.

Further, assumptions about the toxicity, mobility and persistence of chemicals in the environment are inherently uncertain, and that uncertainty must be considered in the overall management of sites. It also must be acknowledged that the science of environmental risk assessment is not fully developed, and that the cumulative impact of creating pockets of residual contamination has not been assessed. There are some gross levels of contamination for which this uncertainty is just not acceptable. In such cases future disturbance could result in acute and irreversible health effects. To summarize, the UCLs identify levels of oil or hazardous material which may pose a "risk-of-a-risk": levels so high that an additional level of control is warranted and additional incentives for site remediation are justified. The UCLs continue to be an important piece in the over-all site management strategy described by the MCP.

Experience implementing the redesigned MCP indicates that some changes to the use of the Upper Concentration Limits *may* be appropriate.

- First, changes to the TPH standards described in Section 1 of this Public Hearing Draft will address a significant universe of sites: LUST sites at which petroleum contamination has come to be located in soils directly under buildings. Those changes significantly raise the UCLs for some petroleum fractions, which should

allow the many such sites to reach a Permanent Solution without increasing potential health and environmental risks -- or risking structural damage to buildings.

- Second, the changes to the UCL/RAO requirements proposed below (beginning with 40.0996) would allow a Class A or B RAO to be achieved at sites where residual soil contamination above UCLs is located at depths greater than 15 feet. Comments to DEP indicate that it is rarely feasible to remediate such soils and that the depth of the contamination minimizes potential health and environmental risks. However, the elimination of the UCL requirement under such conditions would mean that any concentration of a chemical could be left in the ground at depth (assuming that it is not a continuing source, etc...). It is not clear that such conditions would/should meet the regulatory- and lay-definition of a "permanent solution", even adding a requirement for an AUL (AULs had previously not been required for residual contamination at depths greater than 15 ft), requiring a feasibility analysis to demonstrate that such soils are infeasible to remediate, and establishing separate RAO categories (Class A-4, B-3) for such sites.

In addition to the proposal beginning at 40.0996, DEP has discussed other options for changing UCLs requirements. Please comment on these options and/or provide us with other proposals.

CONSIDER CHANGES TO PARTICULAR UCLs. It has been suggested that reevaluation of certain specific UCLs would address most of the sites where exceeding UCLs is preventing the achievement of a Class A or B RAO. As noted above, science-justified changes to the TPH values should reduce UCL problems related to fuel oil/lubricating oil releases. DEP is interested in hearing about additional cases/chemicals which are consistently problematic.

"ISOLATED SOILS". The proposal describe below is limited to soil contamination located > 15 ft below the ground surface. It has been suggested that this be expanded to include all "*isolated soils*". Isolated soils also includes soil located directly under buildings. Extremely high soil concentrations of even slightly volatile material can have dramatic impact on indoor air quality, and the evaluation of indoor air impacts is not simple or routine. Further, isolated soils can be located very close to the surface under basement-less buildings, which can increase the risk of exposure should the building be razed.

ALTERNATIVE D: "ENGINEERED BARRIER". Another option would be to allow a Class A RAO in cases where an "engineered barrier" (designed and maintained to prevent contact with/exposure to contaminants) was installed to cap soil with levels above the UCLs. Comments are solicited on this proposal and on what types of barriers could be considered adequate to ensure that future exposure to the capped soil does not occur.

Please note that there are significant concerns related to leaving contamination at levels

above the UCLs (which could include concentrations up to pure product). Therefore, in order to proceed with promulgating final regulations which change the UCL/RAO requirements, the regulations must adequately address the issues posed by such high levels of residual contamination. DEP is seeking comments on the extent to which the proposed changes to the UCL/RAO requirements (or any alternative proposals) provide a sufficient level of certainty that future exposure to contamination remaining above the UCLs will not occur.

40.0996: Method 3 Upper Concentration Limits

(1) Upper Concentration Limits in soil and groundwater are concentrations of oil and/or hazardous material which, if exceeded under the conditions specified below, indicate the potential for significant risk of harm to public welfare and the environment under future conditions. If a condition of No Significant Risk has not been achieved for future conditions but all substantial hazards have been eliminated, then the site may be eligible for a Class C RAO described in 310 CMR 40.1050.

Note to Reviewers: the addition of section (2) is intended to clarify the application of UCLs, specifically to reinforce the current reg/policy that UCLs are to be compared to average site concentrations and to the average concentration within a Hot Spot. This change does not modify the current approach.

(2) All comparisons of soil and groundwater concentrations to Upper Concentration Limits in Soil and Groundwater required under 310 CMR 40.0000 shall be made using:

- (a) the arithmetic average of the concentration of oil or hazardous material at a disposal site; and
- (b) the arithmetic average of the concentration of oil or hazardous material within any Hot Spot identified at the disposal site.

(23) The risk of harm to public welfare and the environment shall also be characterized by comparing the ~~arithmetic mean of the concentration(s) of the chemical~~ oil or hazardous material in soil and groundwater to the Upper Concentration Limits in Soil and Groundwater listed in 310 CMR 40.0996(5). ~~If one or more hot spots have been identified at the site pursuant to 310 CMR 40.0924(2), then the concentrations within each hot spot shall also be compared to the Upper Concentration Limits.~~

- (a) A level of No Significant Risk of harm to public welfare and to the environment exists or has been achieved for both current and future conditions if no concentration of oil and/or hazardous material exceeds an applicable Upper Concentration Limit.
- (b) A level of No Significant Risk of harm to public welfare and to the environment exists or has been achieved for current conditions, but does not yet exist for future conditions if the concentration of one or more oil and/or hazardous materials exceed an applicable Upper Concentration Limit. The disposal site may, however, meet the conditions of a Class C Response Action Outcome if all other requirements for a Class C Response Action Outcome are satisfied.

(3) Upper Concentration Limits are not applicable to soil:

- (a) which has been permanently immobilized or fixated as part of a ~~remedial~~ response

action, or

- (b) which is located at a depth greater than fifteen feet from the ground surface,
 - 1. except to determine the need for an Activity and Use Limitation, as described at 310 CMR 40.1012(2)(a)3;
 - 2. except to determine the content of a Response Action Outcome Statement, as described at 310 CMR 40.1056(1)(i); and
 - 3. unless a feasibility analysis conducted pursuant to the criteria listed at 310 CMR 40.0860 demonstrates that reducing the concentrations of oil and hazardous material to levels less than or equal to the Upper Concentration Limits is feasible.

(4) The presence of non-aqueous phase liquids (NAPL) having a thickness equal to or greater than ½ inch in any environmental medium shall be considered a level which exceeds Upper Concentration Limits.

(5) Table 6 lists the Upper Concentration Limits in Groundwater and Soil.

SECTION 4B. CONTINUED (SUBPART J)

40.1005: Defining "Foreseeable Period of Time" for Purposes of a Response Action Outcome

- (2) "Any foreseeable period of time" shall mean the period of time during which the conditions for achieving and maintaining a level of No Significant Risk upon which a Class A or Class B RAO is based will remain in effect. Any foreseeable period of time:
- (a) for Class A-1, A-2 or B-1 RAOs shall be an unlimited period of time;
 - (b) for Class B-2 and B-3 RAOs shall be that period of time that Activity and Use Limitations will remain in effect; and
 - (c) for Class A-3 and A-4 RAOs shall be that period of time that Activity and Use Limitations will remain in effect or the design life of any remedial systems necessary to maintain a condition of No Significant Risk, whichever is shorter.

40.1012: Application of Activity and Use Limitations

- (1) The purpose of an Activity and Use Limitation is to narrow the scope of exposure assumptions used to characterize risks to human health from a release pursuant to 310 CMR 40.0900, by specifying activities and uses that ~~will be~~ are prohibited and allowed at the disposal site in the future. This section establishes rules for determining when an Activity and Use Limitation must be used, when one cannot be used, and when one may be a factor to be considered in appropriately characterizing soil and groundwater at a disposal site, pursuant to 310 CMR 40.0923(3).
- (2) Except as provided in 310 CMR 40.1012(3), Activity and Use Limitations shall be required:
- (a) at all disposal sites or portions of disposal sites for which a Response Action Outcome and the risk characterization pursuant to 310 CMR 40.0900 used to support the RAO are based upon the restriction or limitation of Site Activities and Uses to achieve or maintain a level of No Significant Risk including:
 - 1. any disposal site or portion of a disposal site for which a Response Action Outcome is based on MCP Method 1 or 2 Soil Standards and the Exposure Point Concentrations of oil and/or hazardous material exceed the S-1 standards but meet applicable S-2 or S-3 standards; and
 - 2. any disposal site or portion of a disposal site where a Method 3 Risk Characterization performed pursuant to 310 CMR 40.0990 relies on reduced exposure potential due to the assumption of limited site use;
 - 3. any disposal site or portion of a disposal site at which the concentration of an oil or hazardous material in soil located at a depth greater than fifteen feet from the ground surface exceeds an applicable Upper Concentration Limit in Soil listed at 310 CMR 40.0996(5);
 - (b) at all disposal sites for which a Response Action Outcome relies upon Exposure Pathway elimination measures to prevent exposure to levels of oil and/or hazardous material that would otherwise pose a significant risk of harm to health, safety, public welfare or the environment; and
 - (c) at all sites where an existing private well(s) has been abandoned and the

property(ies) served by the private water supply has been connected to a public water supply system in accordance with the provisions of 310 CMR 40.0932(5)(d).

Note to Reviewers: contamination less than UCLs and located greater than 15 feet from the ground surface had been previously exempted from the AUL requirement. This exemption does not change in this proposal. What is added is language requiring AULs for contamination at levels greater than UCLs.

(3) Activity and Use Limitations shall not be required but may be used to provide notice of the existence of residual contamination to future holders of an interest(s) in property that is located within:

- (a) disposal sites or portions of disposal sites where the concentrations of oil and/or hazardous material have been reduced to background or where the requirements described in 310 CMR 40.0923(3)(b) have been met;
- (b) disposal sites or portions of disposal sites ~~whereat~~ at which residual contamination is located at a depth greater than 15 feet from the ground surface and where the concentrations of oil or hazardous material in such soil do not exceed applicable Upper Concentration Limits in Soil listed at 310 CMR 40.0996(5);
- (c) any portion of a disposal site where residual contamination is located within a public way or within a rail right-of-way;
- (d) disposal sites or portions of a disposal site for which potential risks are characterized using Method 1 (310 CMR 40.0970) if the levels of oil and/or hazardous material in soil are at or below the applicable Method 1 category S-1 soil standards listed in 310 CMR 40.0975(6);
- (e) at disposal sites or portions of a disposal site for which potential risks are characterized using Method 2 (310 CMR 40.0980) if the levels of oil and/or hazardous material are at or below the applicable category S-1 soil standards identified in 310 CMR 40.0984 and 40.0985;
- (f) disposal sites or portions of a disposal site for which potential risks are characterized using Method 3 (310 CMR 40.0990) if the levels of oil and/or hazardous material pose No Significant Risk pursuant to 310 CMR 40.0990, including comparison to any applicable or suitably analogous standards, and no limitations on site use were assumed or implied in the Risk Characterization;
- (g) any disposal site or portion of a disposal site where all substantial hazards have been eliminated and where all applicable requirements for a Class C Response Action Outcome have been met pursuant to 310 CMR 40.1050; and
- (h) any other disposal site or portion of a disposal site where an Activity and Use Limitation is not expressly prohibited by 310 CMR 40.1012.

Note to Reviewers: (4) once again clarifies the fact that applicable Method 1 (or 2) standards must be met in order to achieve an RAO using Method 1 (or 2). If a Method 1 (or 2) standard is exceeded when you are using Method 1 (or 2) to characterize a site, then two options are available: (1) conclude that a level of No Significant Risk has not been achieved and remediate, or (2) re-evaluate the site using a more site-specific Method (2 or 3). An AUL cannot change or modify a conclusion, it merely "locks in" the exposure assumptions which result in that conclusion.

- (4) Activity and Use Limitations shall not be used:
- (a) to change the groundwater category of groundwater categorized as GW-1 or GW-2 pursuant to 310 CMR 40.0932; or
 - (b) to justify a conclusion that a condition of No Significant Risk exists or has been achieved at sites characterized using Method 1 or Method 2 if an identified Exposure Point Concentration exceeds an applicable Method 1 or Method 2 standard.
- ~~Where groundwater meets the criteria established in 310 CMR 40.0932 for GW-1 or GW-2, an Activity and Use Limitation shall not be used to change the category.~~
- (5) Activity and Use Limitations:
- (a) shall provide notice to holders of any interest(s) in a property or a portion thereof (including without limitation, owners, lessees, tenants, mortgagees, and holders of easement rights) of the existence and location of oil and/or hazardous material at such property and the Activity and Use Limitations that have been implemented in response thereto; and
 - (b) establish a duty to evaluate risks associated with proposed changes in Site Activities and Uses on the subject property that could increase the risk of harm to health, safety, public welfare or the environment and to perform additional response actions prior to any such change in Site Activities and Uses, as required by 310 CMR 40.0000.
- (6) Any Activity and Use Limitations applied at a disposal site pursuant to 310 CMR 40.0000 shall be instituted and maintained in accordance with 310 CMR 40.1070 through 310 CMR 40.1099.

Note to Reviewers: the following changes add the RAO Class A-4 and B-3 categories for sites with residual contamination in soil greater than UCLs at depths greater than 15 feet.

40.1030: Categories of Response Action Outcomes

- (1) Response Action Outcomes are categorized under 310 CMR 40.1030 through 40.1050 as A-1, A-2, A-3, A-4, B-1, B-2, B-3, or C.
- (2) The specific category of Response Action Outcome applicable to a site or disposal site shall be established based upon the following factors:
 - (a) whether the site or disposal site poses No Significant Risk;
 - (b) whether all substantial hazards posed by the disposal site have been eliminated;
 - (c) whether remedial actions have been taken to achieve a level of No Significant Risk;
 - (d) whether one or more Activity and Use Limitations are required under the provisions of 310 CMR 40.1012 to maintain a level of No Significant Risk;
 - (e) whether concentrations of oil or hazardous material at a site exceed Upper Concentration Limits in Soil and Groundwater listed at 310 CMR 40.0996(5); and
 - (ef) whether remedial actions have achieved background, as described in 310 CMR 40.0900 and 310 CMR 40.1020.

- (1) Class A-1 Response Action Outcomes shall apply to:
 - (a) disposal sites where a Permanent Solution has been achieved and the level of oil and hazardous material in the environment has been reduced to background; or
 - (b) sites where response actions have eliminated all threats of release and no release of oil and/or hazardous material to the environment has occurred.
- (2) Class A-2 Response Action Outcomes shall apply to disposal sites where:
 - (a) a Permanent Solution has been achieved;
 - (b) the level of oil and hazardous material in the environment has not been reduced to background; and
 - (c) one or more Activity and Use Limitations are not required to maintain a level of No Significant Risk.
- (3) Class A-3 Response Action Outcomes shall apply to disposal sites where:
 - (a) a Permanent Solution has been achieved;
 - (b) the level of oil and hazardous material in the environment has not been reduced to background; and
 - (c) one or more Activity and Use Limitations have been implemented pursuant to 310 CMR 40.1012 to maintain a level of No Significant Risk; and
 - (d) no concentration of oil or hazardous material at the disposal site exceeds an applicable Upper Concentration Limit in Soil and Groundwater listed at 310 CMR 40.0996(5).
- (4) Class A-4 Response Action Outcomes shall apply to disposal sites where:
 - (a) a Permanent Solution has been achieved;
 - (b) the level of oil and hazardous material in the environment has not been reduced to background;
 - (c) one or more Activity and Use Limitations have been implemented pursuant to 310 CMR 40.1012 to maintain a level of No Significant Risk;
 - (d) one or more concentrations of oil or hazardous material in soil located at a depth greater than fifteen feet from the ground surface exceed applicable Upper Concentration Limits in Soil listed at 310 CMR 40.0996(5); and
 - (e) an evaluation conducted pursuant to 310 CMR 40.0860 indicates that it is not feasible to reduce the concentrations of oil or hazardous material in soil located at a depth greater than fifteen feet from the ground surface to less than applicable Upper Concentration Limits in Soil listed at 310 CMR 40.0996(5).
- (45) A Class A-1, A-2, A-3, or ~~A-4 or A-3~~ Response Action Outcome shall not apply to any disposal site where:
 - (a) groundwater or soil concentrations of oil and/or hazardous material exceed Upper Concentration Limits specified in 310 CMR 40.0996, except in those cases where the concentrations are shown to be consistent with background or where the soil is located at a depth greater than fifteen feet from the ground surface; or
 - (b) groundwater concentrations exceed an applicable or suitably analogous standard

listed in 310 CMR 40.0993(3) where the groundwater is categorized as GW-1 pursuant to 310 CMR 40.0932.

- (56) Class A-1, A-2, A-3 and ~~A-4 and A-3~~ Response Action Outcomes may be achieved:
- (a) after completion of Immediate Response Actions and/or Release Abatement Measures pursuant to 310 40.0400;
 - (b) after completion of a Phase IV remedial action pursuant to 310 CMR 40.0870;
 - (c) after completion of Phase V operation, maintenance and/or monitoring pursuant to 310 CMR 40.0890; or
 - (d) after completion of Post-RAO operation, maintenance and/or monitoring pursuant to 310 CMR 40.0896.

40:1046: Categories of Class B Response Action Outcomes

- (1) Class B-1 Response Action Outcomes shall apply to disposal sites where remedial actions have not been conducted because a level of No Significant Risk exists and no Activity and Use Limitation is necessary to ensure the existence or maintenance of a level of No Significant Risk.
- (2) Class B-2 Response Action Outcomes shall apply to disposal sites where:
 - (a) remedial actions have not been conducted because a level No Significant Risk exists, but such a level of No Significant Risk is contingent upon one or more Activity and Use Limitations that have been implemented at the disposal site pursuant to 310 CMR 40.1012 to restrict exposures to oil and/or hazardous material; and
 - (b) no concentration of oil or hazardous material at the disposal site exceeds an applicable Upper Concentration Limit in Soil and Groundwater listed at 310 CMR 40.0996(5).
- (3) Class B-3 Response Action Outcomes shall apply to disposal sites where:
 - (a) remedial actions have not been conducted because a level No Significant Risk exists, but such a level of No Significant Risk is contingent upon one or more Activity and Use Limitations that have been implemented at the disposal site pursuant to 310 CMR 40.1012 to restrict exposures to oil and/or hazardous material; and
 - (b) one or more concentrations of oil or hazardous material in soil located at a depth greater than fifteen feet from the ground surface exceed applicable Upper Concentration Limits in Soil listed at 310 CMR 40.0996(5); and
 - (c) an evaluation conducted pursuant to 310 CMR 40.0860 indicates that it is not feasible to reduce the concentrations of oil or hazardous material in soil located at a depth greater than fifteen feet from the ground surface to less than applicable Upper Concentration Limits in Soil listed at 310 CMR 40.0996(5).
- (34) For the purposes of 310 CMR 40.1000 only, the filing or recording and/or registration of one or more Activity and Use Limitations shall not be deemed a remedial action.
- (45) A Class B-1, B-2 or B-3 ~~or B-2~~ Response Action Outcome shall not apply to any

disposal site where:

- (a) groundwater or soil concentrations of oil and/or hazardous material exceed Upper Concentration Limits specified in 310 CMR 40.0996, except in those cases where the concentrations are shown to be consistent with background or where the soil is located at a depth greater than fifteen feet from the ground surface and it is not feasible pursuant to the criteria listed at 310 CMR 40.0860 to reduce such soil concentrations; or
- (b) groundwater concentrations exceed an applicable or suitably analogous standard listed in 310 CMR 40.0993(3) where the groundwater is categorized as GW-1 pursuant to 310 CMR 40.0932.

(5) Class B Response Action Outcomes may be achieved:

- (a) after completion of Initial Assessment Activities pursuant to 310 CMR 40.0405(1);
- (b) after completion of a Phase I Initial Site Investigation Report pursuant to 310 40.0480; or
- (c) after completion of a Phase II Comprehensive Site Assessment pursuant to 310 40.0830;

40.1050: Class C Response Action Outcomes: Temporary Solutions

(1) Class C Response Action Outcomes shall apply to disposal sites where a Temporary Solution has been achieved. A Temporary Solution shall ensure the elimination of any substantial hazard at the disposal site.

(2) Class C Response Action Outcomes shall apply, without limitation, to the following types of disposal sites:

- (a) disposal sites where Upper Concentration Limits specified in 310 CMR 40.0996 are exceeded in soil located at a depth less than or equal to fifteen feet from the ground surface or in groundwater, soil and/or groundwater, but all substantial hazards have been eliminated; and/or
- (b) disposal sites where oil and/or hazardous material concentrations exceed any applicable or suitably analogous standard identified pursuant to 310 CMR 40.0993(3), but such concentrations of oil and/or hazardous material do not pose a substantial hazard.

Note to Reviewers: the following change requires that the RAO Statement explicitly note that residual contamination exceeds UCLs. DEP envisions the addition of a "Greater Than UCL" check-off box on the RAO form.

40.1056: Content of Response Action Outcome Statements

(1) A Response Action Outcome Statement shall be submitted by a RP, PRP or Other Person on a form established by the Department for such purposes, and shall include, at a minimum, the following:

- (a) the site or disposal site name, address and DEP Release Tracking Number(s);
- (b) the class of Response Action Outcome;
- (c) for all RAOs other than RAOs where the concentrations of oil and hazardous material are consistent with or have been reduced to background or where a threat of release has been abated, the Method(s) (Methods 1, 2 or 3) used to characterize the risk of harm posed by the disposal site to health, public welfare and the environment, pursuant to 310 CMR 40.0900;
- (d) the relationship of the Response Action Outcome Statement to any other Response Action Outcome Statements that have been filed for the disposal site, if applicable, together with a statement as to whether any additional response actions are needed for any other portions of the disposal site;
- (e) where the RAO Statement applies to a Class C RAO, indication as to whether any Post-RAO Active Operation and Maintenance of the remedial action under 310 CMR 40.0896 will be conducted;
- (f) indication as to whether the RAO is based upon the implementation of an Activity and Use Limitation, and if so, the type of Activity and Use Limitation implemented at the disposal site. In such cases, a Activity and Use Limitation Opinion accompanied by an Activity and Use Limitation Opinion form prescribed by the Department shall be appended to the RAO Statement pursuant to 310 CMR 40.1056(2)(g);
- (g) except where specifically exempted by the Department based upon the Department's level of involvement in the oversight of response actions at the site or disposal site, an Opinion from a Licensed Site Professional as to whether the requirements of the applicable class of Response Action Outcome specified in 310 CMR 40.1000 have been met; and
- (h) a certification of the Response Action Outcome Statement and all documents submitted with the RAO Statement as required by 310 CMR 40.0009.
- (i) indication as to whether residual concentrations of oil or hazardous material exceed Upper Concentration Limits in Soil or Groundwater, as described at 310 CMR 40.0996.

(2) Except where previously submitted, all documentation, plans and/or reports necessary to support the Response Action Outcome shall be submitted to the Department, including, without limitation, the following:

- (a) as specified in 310 CMR 40.1003(4), a clear and accurate description of the location of the site or the location and boundaries of the disposal site or portion of disposal site to which the RAO applies. Such description shall reference, to the extent practicable, the location of the site, and location and boundaries of the disposal site or portion thereof relative to permanent or semi-permanent landmarks, and/or surveyed boundaries;
- (b) for all Class A Response Action Outcomes and where applicable to Class C Response Action Outcomes, a demonstration that all uncontrolled sources, as specified in 310 CMR 40.1003(5) have been eliminated or controlled;
- (c) for all Class A and B Response Action Outcomes, information supporting the conclusion that a level of No Significant Risk has been achieved or exists;
- (d) for all Class C Response Action Outcomes, information supporting the conclusion that no substantial hazards remain at the disposal site;

- (e) for all Class A Response Action Outcomes, information documenting the extent to which levels of oil and/or hazardous material in the environment have been reduced to background, and for all Class A-2 and A-3 RAOs, the results of the feasibility evaluation conducted pursuant to 310 CMR 40.0860 demonstrating that the achievement of background is not feasible;
- (f) for all Class A-4 and B-3 Response Action Outcomes, the results of the feasibility evaluation conducted pursuant to 310 CMR 40.0860 demonstrating that the achievement of Upper Concentration Limits in soil located at a depth greater than fifteen feet from the ground surface is not feasible;
- (fg) a certified registry copy of any and all Activity and Use Limitations which have been implemented under 310 CMR 40.1070;
- (gh) where the RAO is based upon the implementation of an Activity and Use Limitation, an Activity and Use Limitation Opinion accompanied by an Activity and Use Limitation Opinion form prescribed by the Department as specified in 310 CMR 40.1071 or 310 CMR 40.1074, whichever is applicable;
- (hi) a description of any operation, maintenance, and/or monitoring that will be required to confirm and/or maintain those conditions at the disposal site upon which the RAO is based; and
- (ij) for all Class C Response Action Outcomes, a copy of the plan, as specified in 310 CMR 40.0861(2)(h), which presents definitive and enterprising steps to be taken toward achieving a Permanent Solution at the disposal site.

SECTION 4C. CHANGE IN RANDOM AUDIT WINDOW TIMEFRAME

Note to Reviewers: this change is directed at reducing the uncertainty that a future audit creates for parties who have conducted cleanups, as well as those who may provide lending or buy properties where RAOs have been filed by shortening the time period DEP has to randomly audit a site from 5 to 2 years after of a Class A or B RAO has been filed. As proposed, DEP would retain the ability to audit compliance with any Activity and Use Limitation (AUL) (i.e., to determine whether site activities are consistent with the AUL) for sites where the RAO relies upon an AUL.

40.1110: Selection of Persons, Response Actions and Sites for Audit

(1) The Department may conduct an audit of any RP, PRP, Other Person, response action or site in accordance with 310 CMR 40.1100. The Department selects persons, response actions and sites for audit randomly (Random Audits) and by criteria-specific selection methods (Targeted Audits).

(2) The Department may initiate an audit of any specific RP, PRP, Other Person, response action or site without any limitation as to time, except that the Department shall not initiate a Random Audit with respect to any specific person, response action or site after ~~five~~ two years has passed since the date of the Department's receipt of:

(a) a Class A or Class B Response Action Outcome Statement; or

(b) an LSP Evaluation Opinion stating that the requirements for a Class A or B Response Action Outcome have been achieved from such person and/or pertinent to such response action and/or site. Except as expressly provided by 310 CMR 40.1110(3), 310 CMR 40.1110(2) shall not be construed to limit the Department's authority to initiate a Targeted Audit of any person, response action or site.

Notwithstanding any provision in 310 CMR 40.1110(2), the Department may initiate Random Audits to determine compliance with Activity and Use Limitations without any limitation as to time.

SECTION 4D. NOTICE TO THE PUBLIC OF RESIDUAL CONTAMINATION

Note to Reviewers: an issue has been raised in the context of "Brownfields" discussions about how to provide notice to citizens about contamination remaining at a site after a permanent solution has been achieved, so that future activities at or near the site do not create new exposures to remaining contamination (and so that people working and living are aware of the need for protective action that new uses may require). This issue has been raised in three specific contexts:

- The MCP currently requires that copies of Activity or Use Limitations (AULs, which are deed restrictions or deed notices) be sent to local officials and that legal notices be published in newspapers to notify the general public. However, owners of abutting property are not currently required to be individually notified. Notices sent to each abutter of property covered by an AUL would provide information about restricted and permitted activities, as well as any continuing obligations that are required to maintain a condition of "No Significant Risk". With this information, abutters may work with local officials (who already receive copies of AULs) to ensure that new activities at the site do not result in new exposure to contamination. If DEP decides to require that notice of AULs be provided to abutters of property subject to an AUL, the requirement would be added to Subpart N, "Public Involvement" [310 CMR 40.1403(7)].
- The MCP currently requires that, where shallow groundwater is contaminated by volatile substances (e.g., chlorinated solvents), the MCP's GW-2 cleanup standards must be met if there is an occupied structure within 30' of the plume. If there are currently no buildings that close to the plume (or any existing buildings there are vacant), the MCP does not currently require that GW-2 standards be met to achieve a permanent solution [see 310 CMR 40.0932(6)] . These situations may meet all the applicable requirements for a permanent solution at the time that cleanup decisions are made. However, property above the groundwater plume could be developed (or redeveloped) in the future, or buildings that are currently vacant could be rehabilitated and occupied. These new conditions could create new exposures to contamination that remains in the groundwater, but the owners of the affected property may not be aware of either the residual contamination or the need to do anything about it.

In situations where GW-2 standards do not apply due to the lack of occupied buildings above or close to the plume, AULs could be used to advise future property owners of conditions that could pose a significant risk if the use of their property changes. If AULs were to be required, MCP provisions in Subpart J (310 CMR 40.1012) would be revised appropriately. Another approach would be to require that, in categorizing groundwater, the foreseeable construction of buildings on or close to a plume of volatile contamination be considered. This would require a revision of 310 CMR 40.0932(6).

- GW-1 standards (which ensure that the groundwater is safe to drink) apply where the groundwater is in a Current or Potential Drinking Water Source Area [see 310 CMR 40.0932(4) and the definitions of these terms in 310 CMR 40.0010]. Cleanups of groundwater that is not categorized as GW-1 do not need to meet the Massachusetts

Drinking Water Standards. Groundwater located within 500' of a private water supply must be categorized as GW-1, but only if the private water supply existed at the time that the release was reported to DEP.

While there is a general trend toward closing private wells and hooking up to public water supplies where they are available (which are believed to be more reliable sources of clean drinking water), there have been a number of cases in the last several years where new private drinking water wells are being installed in areas that have long been served by public water systems. In these cases, 21E cleanups may not provide an adequate level of cleanup to ensure that new private wells produce water that is safe to drink.

The MCP currently requires that notice of all Response Action Outcome Statements be provided to the Board of Health, which is usually the local agency that regulates new private water supplies, and to the Chief Municipal Official of the community in which the site is located. However, not all communities actually oversee installation of new private drinking water wells -- in these cases, the people who put in new wells may not be aware that the water may not be safe to drink. One possible approach to broadening the availability of information about groundwater cleanups would be to require publication of a legal notice of the availability of a Response Action Outcome Statement in a newspaper that circulates in the community in which the site is located. Another approach may be to use AULs for property that could be affected by a groundwater plume. However, this may not be practical, given the large areas of the Commonwealth in which groundwater is not classified as GW-1.

For all of these situations, no approach will be fool-proof: people who receive notice of a cleanup today may move, and the new owner (or a tenant) may not get the information. There is also a long-standing problem that people do not always read (or remember) notices that they receive. These issues have been discussed in draft MCP proposals in 1993 (for new private wells) and in 1994 (for notice to abutters of AULs and to owners of property over plumes that would be categorized as GW-2 if occupied buildings were present). In these previous discussions, DEP decided that the costs of providing these notices outweighed the practical benefits that were likely to accrue.

In 1996, the context for these decisions may be changing: the proposals for financial assistance and liability relief resulting from Brownfields discussions that the agency has been engaged in over the last two years should encourage the reuse and redevelopment of contaminated property. These new development projects may result in new uses that were not contemplated at the time that cleanup decisions were made.

DEP solicits comment about how to improve the availability of information to people who may need it in the future, so that the likelihood of new exposures to remaining contamination is minimized. These issues will be discussed with the Waste Site Cleanup Program Advisory Committee and with the Brownfields Advisory Committee/Urban Task Force. Specific suggested revisions in the MCP would be proposed with the next package of MCP revisions -- either resulting from the enactment of "Brownfields" legislation, or from the overall program

evaluation that will be started in Fall 1997 (required as part of DEP's overall review of its regulations by Executive Order No. 384, and by the Secretary of Environmental Affairs in response to the Environmental Notification Form submitted to the MEPA Unit by DEP in 1992).

Section 5

Pittsfield Pilot Project

SECTION 5. PITTSFIELD PILOT

Note to Reviewers: this provision is intended to provide the framework for implementing the Pittsfield Pilot which would allow for the use of "long term temporary solutions" pursuant to section 23 of the Berkshire Economic Development Act, effective August 9, 1996.

40.0027 Pittsfield Pilot

- (1) Purpose. The purpose of this section is to establish rules for a pilot program to implement one or more temporary solutions for long term use at eligible sites in the City of Pittsfield to promote the reuse, redevelopment, and economic growth of such sites pursuant to the Berkshire Economic Development Act.
- (2) Definitions. The following term applies to 310 CMR 40.0027:
- (a) Plan means the specific description of the Long-Term Temporary Solution(s) to be implemented at the site subject to the Pilot Program which is prepared by the Department of Environmental Protection.
- (3) Applicability.
- (a) This pilot program applies to industrial portions of disposal sites in the City of Pittsfield:
1. that are greater than one-hundred (100) contiguous acres in size;
 2. that are owned by a single owner as of August 9, 1996;
 3. for which notification of a release of oil and/or hazardous material has been provided pursuant to M.G.L. chapter 21E and 42 U.S.C. 6901 et seq as of August 9, 1996; and
 4. where existing zoning only allows for industrial uses.
- (b) This pilot program shall not apply to any rivers, streams, or other surface waters and the banks thereof.
- (4) General Requirements for the Pilot Program. The general requirements for the pilot program include:
- (a) Timeframe. One or more long term temporary solutions shall be implemented in accordance with 310 CMR 40.0027 and the Plan prepared by the Department of Environmental Protection within **[specify timeframe from the effective date of the Act]**;
- (b) Participation. The active participation of a prospective owner or owners, or a lessee or lessees with site use plans which will result in the creation of a substantial number of new jobs is required;
- (c) Performance Standard. The Long-Term Temporary Solution(s) implemented at the disposal site(s) subject to the Pilot Program shall be consistent with the requirements and standards as described in the Plan and ensure the protection of public health, safety, welfare and the environment;
- (d) Change in Party Conducting Response Actions.

[Note to Reviewers: the legislation directs DEP to provide a mechanism for the party that enters into the pilot to transfer the property and the responsibility for maintaining the temporary solutions. These requirements would include providing notice to DEP, and DEP's review of the new party's compliance history, and some form of financial assurance that the long term solution will be maintained. This could perhaps be handled like a permit transfer. Comments?]

(e) Public Involvement. Opportunity for public involvement shall be provided according to 310 CMR 40.1400.

(5) Effect of Pilot Program. Compliance with the provisions of 310 CMR 40.0027 will be deemed to satisfy the remediation requirements of section 3A of MGL c.21E and of 310 CMR 40.0000.

(6) Termination of Pilot Program.

(a) A disposal site which is subject to the Pilot Program shall continue to be covered by the terms of the Pilot Program unless and until:

1. the Department of Environmental Protection determines that the party performing response actions under the Pilot Program is not implementing or maintaining one or more Long-Term Temporary Solutions in compliance with the Plan or the Requirements of 310 CMR 40.0027; and
2. after notice by the Department, said party fails to correct violations within the timeframe specified in the notice.

(b) Failure to correct violation within the specified timeframe will result in the termination of the Pilot Program, and the disposal site(s) will be subject to the requirements to pursue a Permanent Solution pursuant to M.G.L. c.21E and 310 CMR 40.0000.

Section 6

Technical Corrections

Note to Reviewers: this correction is intended to clarify that the deadlines for response actions run from the date on which an actual Tier Classification Submittal is received and not from the date upon which a site is classified by default (because the deadline for submitting the classification is missed).

40.0560: Response Action Deadlines and Requirements for Tier II Disposal Sites

(1) Deadlines for Response Action Outcomes. Except as expressly provided by these regulations or as otherwise ordered or agreed to in writing by the Department, any person undertaking response actions at a Tier II disposal site shall achieve a Response Action Outcome within five years of the ~~effective date of initial Tier Classification.~~ Department's receipt of the initial Tier Classification Submittal.

(a) A Tier II Classification for a disposal site shall expire five years from the ~~effective date of the Department's receipt of the initial Tier Classification Submittal~~ for of such disposal site; and

(b) An RP, PRP or Other Person shall not conduct Comprehensive Response Actions pursuant to 310 CMR 40.0800 at a disposal site for which a Tier II Classification has expired unless a Tier II Classification Extension is obtained pursuant to 310 CMR 40.0560(7).

(2) Deadlines for Submittals. Except as provided in 310 CMR 40.0560(3), or as expressly provided by 310 CMR 40.0000 or as otherwise ordered or agreed to in writing by the Department, any person undertaking response actions at a Tier II disposal site shall submit the following documents to the Department by the following deadlines:

(a) a scope of work for a Phase II - Comprehensive Site Assessment pursuant to 310 CMR 40.0834 prior to the implementation of Phase II field work, unless the Phase II field work had been implemented prior to Tier Classification;

(b) a Phase II Report, and, if applicable, a Phase III Remedial Action Plan, within two years of the ~~effective date of the Department's receipt of the initial Tier Classification Submittal;~~

(c) a Phase IV Remedy Implementation Plan within three years of the ~~effective date of the Department's receipt of the initial Tier Classification Submittal;~~ and

(d) a Response Action Outcome Statement pursuant to 310 CMR 40.1000 within five years of the ~~effective date of the Department's receipt of the initial Tier Classification Submittal.~~

(8) Changes in Persons Undertaking Response Actions at Tier II Disposal Sites.

(a) No person other than a person who has filed a Tier II Classification Submittal for a disposal site with the Department or has received a Waiver of Approvals from the Department for a disposal site may perform response actions at such disposal site, unless that person submits a Tier II Transfer Submittal to the Department.

(b) A Tier II Transfer Submittal shall consist of the following:

1. a completed transmittal form using a form provided by the Department for such purposes, which shall include a statement and/or report explaining the reasons for the change in persons undertaking response actions and a proposed

effective date for such change. Such transmittal form shall be provided to the Department at least 60~~21~~ days in advance of the proposed effective date of the change;

Note to reviewers: this correction makes it clear that parties can perform whatever assessment is necessary to classify a site and/or apply for a permit prior to having a Tier I permit.

40.0702: Applicability

(5) Except as provided in 310 CMR 40.0703(2), a person who does not have a Tier I Permit for a disposal site for which a Tier I Permit is required shall not perform any response actions at such disposal site unless such person is conducting an Immediate Response Action in accordance with 310 CMR 40.0410 or Initial Site Investigation Activities as described in 310 CMR 40.0405(1), up to and including those activities required for preparation of a Phase I Report, Numerical Ranking System scoresheet and Tier Classification and/or Permit application, if applicable.

Note to reviewers: the following change to 310 CMR 40.0932(5)(c)4. is a minor correction to the Case-Specific petition process for designating an area as a Non-Potential Drinking Water Source Area.

40.0932(5)(c)

...

4. The portions of the petition described in 310 CMR 40.0932(5)(c)3.a.-e. ~~4.~~ shall be available to the public no later than the date on which the public comment period begins.

Note to reviewers: the next series of changes are corrections and clarifications related to Activity and Use Limitations.

Amend 310 CMR 40.1070 as follows:

40.1070: Implementation of Activity and Use Limitations

(1) One or more of the following Activity and Use Limitations shall be implemented at each disposal site or portion of a disposal site where the Activity and Use Limitation is necessary and appropriate to meet the requirements of 310 CMR 40.1012:

- (a) a Grant of Environmental Restriction, implemented in accordance with 310 CMR 40.1071;
- (b) an Environmental Restriction implemented by the Department, in accordance with 310 CMR 40.1073; or

(c) a Notice of Activity and Use Limitation, implemented in accordance with 310 CMR 40.1074.

(2) Activity and Use Limitations imposed pursuant to 310 CMR 40.1012 shall be implemented and adhered to by the owner and holders of interest(s) in the property and/or a license to use the property subject to the Activity and Use Limitation, and/or the RP, PRP or Other Person conducting response actions at the disposal site or portion of a disposal site in accordance with the procedures established in 310 CMR 40.1070 through 310 CMR 40.1099.

(3) An Activity and Use Limitation shall be deemed implemented upon its being duly recorded and/or registered with the appropriate registry of deeds and/or land registration office.

Replace 310 CMR 40.1071(2) with the following:

40.1071: Grants of Environmental Restrictions for Disposal Sites Where a RP, PRP Or Other Person Conducts Response Actions

...

(2) Contents of A Grant of Environmental Restriction A Grant of Environmental Restriction shall contain the following information:

(a) a description of the property and disposal site, including:

1. the location of the property and its street address;
2. a metes and bounds description of the ~~property~~ the parcel of land which contains the area that is subject to the Grant of Environmental Restriction; and

- a. if the parcel of land is not registered land, a ~~recordable or registerable~~ survey plan of such ~~property~~ parcel prepared by a Massachusetts Registered Land Surveyor ~~or a Massachusetts Registered Professional Engineer~~; or
- b. a reference to a survey plan of such property that has been recorded and/or a Land Court Plan that has been registered;
3. if the area subject to the Grant of Environmental Restriction (i.e. "the Restricted Area") comprises only a portion of the property described in 310 CMR 40.1071(2)(a)(2), a metes and bounds description of the Restricted Area; and

- a. a recordable ~~or registerable~~ survey plan of the Restricted Area prepared by a Massachusetts Registered Land Surveyor ~~or a Massachusetts Registered Professional Engineer~~; or
- b. (for registered land only) a sketch plan, prepared by a Massachusetts Registered Land Surveyor, which shows the metes and bounds of the Restricted Area.
- ~~bc.~~ a reference to a survey plan of the Restricted Area that has been recorded and/or a Land Court Plan that has been registered;
- d. ~~I~~ if the entire property is to be restricted in accordance with 310

CMR 40.1071(2)(a)2., then a separate plan for the Restricted Area need not be included;

4. a sketch plan showing the location of the Restricted Area in relation to the boundaries of the disposal site to the extent that the boundaries of the disposal site have been established.
- (b) name(s) of the property owner(s);
 - (c) the disposal site name and DEP Release Tracking Number(s);
 - (d) a statement that the Grant of Environmental Restriction is a gift to the Department pursuant to M.G.L. c. 21E, § 6;
 - (e) a statement that the Grant of Environmental Restriction shall be binding upon the property owner and any parties claiming by, through, or under said owner, and shall inure to the benefit of all parties claiming by, through or under the Department;
 - (f) an Activity and Use Limitation Opinion that meets the requirements of 310 CMR 40.1071(1)(b);
 - (g) a statement that the Grant of Environmental Restriction shall run in perpetuity or for a specified number of years, and that the Environmental Restriction conforms to M.G.L. c. 184, § 26;
 - (h) a precise description of the Site Activities and Uses which in accordance with the Activity and Use Limitation Opinion are prohibited on the property such as:
 1. construction or placement of buildings, utilities, roadways, parking lots or other structures;
 2. excavating, dredging or otherwise removing sediments, soils, loam, peat, sand, gravel, rock or other mineral substance;
 3. planting, removal or destruction of trees, shrubs, or other vegetation;
 4. using a private well to supply groundwater for human consumption; or
 5. other Site Activities and Uses which would likely result in significant risk or a substantial hazard from exposures to oil and/or hazardous material if the Site Activity and Use were to take place on the property;
 - (i) a precise description of the obligations and conditions which, in accordance with the Activity and Use Limitation Opinion, are necessary to meet the objectives of the Grant of Environmental Restriction. Such obligations may include the continued proper operation of remedial actions, specific procedures governing excavation activities to protect workers and disposal site neighbors, and the erection and maintenance of fences to prohibit access of unauthorized persons to the disposal site;
 - (j) a precise description of Site Activities and Uses, which, in accordance with the Activity and Use Limitation Opinion, may be permitted on the subject property, including without limitation specific provisions for purposes of maintenance, alteration, or repair of utilities, or specific types of land uses;
 - (k) except where the property to be restricted is not part of a disposal site, procedures to be followed when an emergency requires immediate excavation of contaminated soil to repair utility lines or other infrastructure on the disposal site, or to respond to other types of emergencies (*e.g.*, fire or floods) that may result in a significant risk of harm from exposure to oil and/or hazardous material at the disposal site, including:
 1. notifying the Department within two hours of obtaining knowledge of such emergency condition;

2. limiting disturbance of contaminated media to the minimum reasonably necessary to adequately respond to the emergency; and
 3. undertaking specified precautions to minimize exposure of workers and neighbors of the disposal site to contaminated media (e.g., the need for specific types of protective clothing for workers conducting the excavation, and procedures for minimizing the liberation of contaminated dust); and
 4. engaging the services of an LSP to prepare or supervise preparation and implementation of a written plan for restoring the site to a condition consistent with the Grant of Environmental Restriction, and to review and evaluate response actions to ensure minimal disturbance of contaminated media. A copy of such plan shall be submitted to the Department within ten days of its execution, with an Opinion that establishes whether the property subject to the Grant of Environmental Restriction has been restored to a condition consistent with the Grant of Environmental Restriction.
- (l) easements for the term of the Grant of Environmental Restriction to the Department, its agents, contractors, subcontractors, and employees for purposes of providing access to the subject property to inspect the area subject to the Grant of Environmental Restriction to ensure compliance with its terms, and to conduct response actions consistent with M.G.L. c. 21E and the 310 CMR 40.0000;
 - (m) a provision that the Grant of Environmental Restriction shall run with the land;
 - (n) an agreement to incorporate either in full or by reference the Grant of Environmental Restriction into all deeds, easements, mortgages, leases, licenses, occupancy agreements, or any other instruments conveying an interest in and/or a right to use the property;
 - (o) the procedures for amending and releasing the Grant of Environmental Restriction as described in 310 CMR 40.1080 and 40.1083;
 - (p) title reference by which the property owner(s) acquired title to the property; and
 - (q) the notarized signature(s) of the property owner(s), the notarized signature and seal of the LSP who signed the Activity and Use Limitation Opinion, and the signature of the Commissioner.
- ...

Delete 310 CMR 40.1072(6)(e), since it will not be necessary if 310 CMR 40.1070 is amended as proposed above:

~~(e) A Grant of Environmental Restriction shall become effective upon its recordation and/or registration with the appropriate Registry of Deeds and/or Land Registration Office.~~

Replace 310 CMR 40.1074(2) with the following:

40.1074: Notice of Activity and Use Limitation

- (2) Contents of a Notice of Activity and Use Limitation. A Notice of Activity and Use Limitation shall contain the following information:
 - (a) the location of the property, including:

1. the property's street address;
 2. a metes and bounds description of the ~~property parcel~~ of land which contains the area that is subject to the Notice of Activity and Use Limitation; and
 - a. if the parcel of land is not registered land, a ~~recordable or registerable~~ survey plan of such ~~property parcel~~ prepared by a Massachusetts Registered Land Surveyor ~~or a Massachusetts Registered Professional Engineer~~; or
 - b. a reference to a survey plan of such property that has been recorded and/or a Land Court Plan that has been registered;
 3. if the area subject to the Notice of Activity and Use Limitation (i.e. "the Restricted Area") comprises only a portion of the property described in 310 CMR 40.1071(2)(a)(2), a metes and bounds description of the Restricted Area; and
 - a. a recordable ~~or registerable~~ survey plan of the Restricted Area prepared by a Massachusetts Registered Land Surveyor ~~or a Massachusetts Registered Professional Engineer~~; or
 - b. (for registered land only) a sketch plan, prepared by a Massachusetts Registered Land Surveyor, which shows the metes and bounds of the Restricted Area.
 - ~~bc.~~ a reference to a survey plan of the Restricted Area that has been recorded and/or a Land Court Plan that has been registered;
 - d. ~~1~~ if the entire property is subject to the Notice of Activity and Use Limitation in accordance with 310 CMR 40.1074(2)(a)2., then a separate plan for the Restricted Area need not be included;
 4. a sketch plan showing the location of the ~~Restricted Area~~ area subject to the Notice of Activity and Use Limitation in relation to the boundaries of the disposal site to the extent that the boundaries of the disposal site have been established.
- (b) name(s) of the property owner(s);
 - (c) the disposal site name and DEP Release Tracking Number(s);
 - (d) a description of the Site Activities and Uses permitted on the subject property, including but not limited to specific provisions for purposes of maintenance or repair of utilities, and specific types of land uses;
 - (e) a description of any obligations and/or conditions for conducting the permitted Site Activities to meet the objectives of the Notice of Activity and Use Limitation;
 - (f) a description of any Site Activities and Uses that are inconsistent with the Response Action Outcome;
 - (g) an agreement to reference this Notice in all deeds, easements, mortgages, leases, licenses, occupancy agreements, or any other instruments which convey an interest in and/or a right to use the property subject to the Activity and Use Limitation pursuant to the Response Action Outcome;
 - (h) reference to procedures to be followed to ensure that changes in the permitted activities and/or uses meet the objectives of the Notice of Activity and Use Limitation; and
 - (i) the notarized signature(s) of the property owner(s), and the notarized signature and seal of the LSP who signed the Activity and Use Limitation Opinion.

To make the Forms for Grants of Environmental Restriction and Notices of Activity and Use Limitation (Forms 1072A and 1075 respectively) consistent with the above changes, DEP proposes the following change in both forms (same language):

Delete the third "Whereas" clause on the first page of each form, and replace it with the following:

[WHEREAS, a portion of the Property ("Portion of the Property") is subject to this [Grant of Environmental Restriction][Notice of Activity and Use Limitation]. The Portion of the Property is more particularly bounded and described in Exhibit A-1, attached hereto and made a part hereof. The Portion of the Property is shown [on a plan to be recorded herewith][on a plan recorded with _____ County Registry of Deeds in Plan Book _____, Plan _____,] and/or [on a sketch plan attached hereto and filed herewith for registration];

Note to reviewers: the change to 310 CMR 40.1251 is intended to prevent the Department from waiting an additional 21 days if another interest in the property appears of record while DEP is preparing the Notice of Intent.

40.1251: Notice of Intent to Perfect a Lien

Whenever the Department intends to record, register or file a lien on real or personal property pursuant to M.G.L. c.21E, § 13, the Department shall provide to the following persons a notice of such intent:

- (1) any owner of property whose name and address is known to the Department as of twenty-one days prior to the date the Department provides such notice;
- (2) any other person having a recorded or registered property interest in the property as of twenty-one days prior to the date the Department provides such notice and whose name and address is known to the Department;
- (3) any person having an unrecorded or unregistered property interest in the property whose interest, name and address is known to the Department as of twenty-one days prior to the date the Department provides such notice; and
- (4) any person having an unrecorded or unregistered property interest in the property whose interest, name and/or address is unknown to the Department.

PROPOSED CHANGES TO THE MCP NUMERICAL STANDARDS

Note to Reviewers: The following proposed standards have been computed using the approach previously developed by DEP for the calculation of Method 1 Standards (MADEP, April 1994), incorporating the assumptions and modifications recommended by the agency in its May 1996 VPH/EPH Issues Paper. However, two specific issues are still under consideration at this time:

1. **PQLs** -Some of the proposed groundwater standards for the Aliphatic fractions *may* be near or even below the Practical Quantitation Limits (PQLs) for the draft VPH and EPH analytical methods. DEP is currently working to finalize these methods, and determine appropriate detection and reporting limits. If necessary, the final standards will be raised to be no lower than these PQL concentrations. Also, some of the proposed TPH groundwater standards *may* likewise be near or below PQL values for common TPH analytical methods. However, given the lack of standardization of such test methods, it is unclear how much of a problem this may be. Moreover, even if these values are below the PQLs of some TPH methods, it would not appear to be appropriate to raise the TPH standards, given their (optional) use as a conservative screening tool. Comment in this regard is being sought.
2. **UNDISSOLVED NAPL** - It is known that aliphatic hydrocarbons have little affinity for the water phase, and, based upon solubility limits, one could postulate that it should not be a problem to meet these low "dissolved" groundwater standards at most sites. However, experience and literature have documented the problems that can be encountered in obtaining and analyzing a strictly dissolved-phase groundwater sample, particularly from monitoring wells with a past history of non-aqueous phase liquids (NAPL). In such cases, undissolved globules of NAPL may remain entrained in and around the well screen for an extended period of time, even after free liquid NAPL is no longer observable. During sampling of the well, these undissolved globules may become suspended within the water column and within a water sample, where they are extracted and reported as a hydrocarbon analyte. In some cases, filtering or even centrifuging of a sample may be necessary to obtain dissolved concentrations, although even what is considered "dissolved" can sometimes be problematic. Lastly, co-solvent effects of certain fuel additives may also serve to increase concentrations of hydrocarbons in groundwater. Comments on these issues, and their implications to the proposed groundwater standards, are being sought.

SEE ATTACHED TABLES AND SPREADSHEETS FOR DETAILS OF THE DERIVATION OF THE STANDARDS

FOOTNOTE CHANGE:

The current TPH standards listed in Tables 1 through 6 of Subpart I of the Massachusetts Contingency Plan are modified by a footnote. Proposed changes to all such footnotes are as follows:

Total Petroleum Hydrocarbon as measured using standard analytical methods ~~or methods which provide toxicity-weighted concentrations, such as the MADEP TPH approach.~~ In lieu of this general TPH standard, parties may use the appropriate combination of Aliphatic and Aromatic Hydrocarbon Fraction standards. The use of this general TPH standard is a valid option only for C₉ and greater petroleum hydrocarbons; it is not appropriate to characterize risks from lighter (gasoline-range) hydrocarbons. This general TPH standard does not address and is not sufficient to evaluate specific chemicals which may be present in some petroleum products and which have promulgated MCP standards (such as benzene, toluene, ethylbenzene, xylenes and polycyclic aromatic hydrocarbons (PAHs)).

NOTE: Pursuant to 310 CMR 40.0982, the proposed Method 1 standards, Method 2 Direct Contact Values and Upper Concentration Limits which follow may be used at the RP's, PRP's or Other Person's option to characterize risk at a disposal site prior to the final promulgation of these standards. Risk characterizations making use of these standards during this time period shall

be considered a Method 2 Risk Characterization. **IMPORTANT:** *The Reportable Concentrations listed below cannot be used until the final promulgation of these regulations.*

Changes to MCP Table 1 - 310 CMR 40.0974(2)

Oil or Hazardous Material	Old GW-1 µg/L	New GW-1 µg/L	Old GW-2 µg/L	New GW-2 µg/L	Old GW-3 µg/L	New GW-3 µg/L
Methylnaphthalene, 2-	No changes	No changes	No changes	No changes	No changes	No changes
TOTAL PETROLEUM HYDROCARBON	1,000	200 ¹	N/A	100 ²	50,000	3,000 ³
C ₅ through C ₈ Aliphatic Hydrocarbons	-	400 ⁴	-	20 ^{4,6}	-	40,000 ^{4,8}
C ₉ through C ₁₂ Aliphatic Hydrocarbons	-	4,000 ⁴	-	100 ⁴	-	20,000 ^{4,9}
C ₉ through C ₁₈ Aliphatic Hydrocarbons	-	4,000 ⁴	-	80 ^{4,6}	-	20,000 ^{4,9}
C ₁₉ through C ₃₆ Aliphatic Hydrocarbons	-	1,000 ⁵	-	N/A ⁷	-	1,000 ⁵
C ₉ through C ₁₀ Aromatic Hydrocarbons	-	200 ⁴	-	100 ⁴	-	4,000 ^{4,10}
C ₁₁ through C ₂₂ Aromatic Hydrocarbons	-	200 ⁴	-	9,000 ⁴	-	3,000 ^{4,11}
Vinyl Chloride	No changes	No changes	No changes	No changes	600	40,000 ^{4,12}

1. The new GW-1 standard for traditional TPH measures used as a conservative screening tool is based upon the lowest of the GW-1 standards for the specific fractions.
2. The new GW-2 standard for traditional TPH measures used as a conservative screening tool is based upon the C₉-C₁₀ Aromatic Fraction. Please note the discussion about PQLs in note 6 below for why this was not set to the lowest fractional standard.
3. The new GW-3 standard for traditional TPH measures used as a conservative screening tool is based upon the C₉-C₁₀ Aromatic Fraction. Please note the discussion about solubility in note 5 below for why this was not set at the lowest fractional standard.
4. Risk-Based standard.
5. The GW-1 and GW-3 standards for C₁₉ - C₃₆ Aliphatic Hydrocarbons is based upon a solubility of 1 mg/L for this fraction.
6. Some of the proposed groundwater standards for the Aliphatic fractions may be near or even below the Practical Quantitation Limits (PQLs) for the draft VPH and EPH analytical methods. Please refer to the discussion in the Note To Reviewers #1 above.
7. Given the low volatility of the compounds in this fraction, the GW-2 standard is considered "Not Applicable".
8. The GW-3 standard for this fraction is based upon the aquatic toxicity of n-hexane: EC50(45 mmol/m3)/10 - Daphnia magna. This is an estimate of a low-effects levels in various aquatic species, not USEPA derived Ambient Water Quality Criteria. Comment is sought on the appropriateness of these values and alternatives.
9. The GW-3 standard for this fraction is based upon the aquatic toxicity of decane: Daphnia mortality - Lowest LC50 (18,000 ug/L) /10. This is an estimate of a low-effects levels in various aquatic species, not USEPA derived Ambient Water Quality Criteria. Comment is sought on the appropriateness of these values and alternatives.
10. The GW-3 standard for this fraction is based upon the aquatic toxicity of ethylbenzene. Comment is sought on the appropriateness of these values and alternatives.
11. The GW-3 standard for this fraction is based upon the aquatic toxicity of PAHs. Comment is sought on the appropriateness of these values and alternatives.
12. Vinyl Chloride changes result from a corrected solubility constant.

Note to Reviewers: The GW-2 standards proposed above for aliphatic petroleum fractions are based upon the available Reference Concentration for n-hexane and multiples thereof, and the C₉ through C₁₀ Aromatic Hydrocarbons value is based upon the noncancer health impacts of benzene (a C₆ compound). While these are conservative (health protective) assumptions, they may overstate the actual risk posed by such contaminants through inhalation of vapors. MADEP staff have begun to research a more appropriate approach, and the conservative values proposed here (based on the limited data currently available) may change. DEP solicits comments in this area, including references to specific toxicological studies related to allowable inhalation exposure to petroleum compounds. Please be advised that final GW-2 standards may be justified at levels up to 100

times the values proposed in this draft.

Changes to MCP Table 2 - 310 CMR 40.0975(6)(a)

Oil or Hazardous Material	Old		New		Old		New	
	S-1/GW-1	µg/g	S-1/GW-1	µg/g	S-1/GW-2	µg/g	S-1/GW-2	µg/g
Methylnaphthalene, 2-	0.7		4 ^{1,2}		20		500 ^{2,3}	
TOTAL PETROLEUM HYDROCARBON	No Change	(500)	No Change	(500)	No Change	(500)	No Change	(500)
C ₅ through C ₈ Aliphatic Hydrocarbons	-		100 ³		-		100 ³	
C ₉ through C ₁₂ Aliphatic Hydrocarbons	-		100 ³		-		100 ³	
C ₉ through C ₁₈ Aliphatic Hydrocarbons	-		1,000 ³		-		1,000 ³	
C ₁₉ through C ₃₆ Aliphatic Hydrocarbons	-		2,500 ³		-		2,500 ³	
C ₉ through C ₁₀ Aromatic Hydrocarbons	-		100 ³		-		100 ³	
C ₁₁ through C ₂₂ Aromatic Hydrocarbons	-		800 ³		-		800 ³	
Vinyl Chloride	No Changes		No Changes		No Changes		No Changes	

1. The proposed standard is based upon leaching-to-groundwater pathway which results in a more stringent (lower) than the direct contact standard (Table 5).
2. The change is due to a revised Henry's Constant (now 4.99×10^{-4} atm-m³/mol) for 2-Methylnaphthalene.
3. The proposed standard is based on the direct contact standard (Table 5) as the leaching-to-groundwater pathway results in a higher soil concentration.

Changes to MCP Table 3 - 310 CMR 40.0975(6)(b)

Oil or Hazardous Material	Old		New		Old		New		Old		New	
	S-2/GW-1	µg/g	S-2/GW-1	µg/g	S-2/GW-2	µg/g	S-2/GW-2	µg/g	S-2/GW-3	µg/g	S-2/GW-3	µg/g
Methylnaphthalene, 2-	0.7		4 ^{1,2}		20		1,000 ^{2,3}		7		1,000 ^{2,4}	
TOTAL PETROLEUM HYDROCARBON	No Change	(2,500)			No Change	(2,500)			No Change	(2,500)		
C ₅ through C ₈ Aliphatic Hydrocarbons	-		500 ³		-		500 ³		-		500 ³	
C ₉ through C ₁₂ Aliphatic Hydrocarbons	-		500 ³		-		500 ³		-		500 ³	
C ₆ through C ₁₈ Aliphatic Hydrocarbons	-		2,500 ³		-		2,500 ³		-		2,500 ³	
C ₁₉ through C ₃₆ Aliphatic Hydrocarbons	-		5,000 ³		-		5,000 ³		-		5,000 ³	
C ₉ through C ₁₀ Aromatic Hydrocarbons	-		500 ³		-		500 ³		-		500 ³	
C ₁₁ through C ₂₂ Aromatic Hydrocarbons	-		2,000 ^{1,4}		-		2,000 ³		-		2,000 ³	
Vinyl Chloride	No Changes				0.3		0.4 ⁵		No Changes			

1. The proposed standard is based upon leaching-to-groundwater pathway which results in a more stringent (lower) than the direct contact standard (Table 5).
2. The change is due to a revised Henry's Constant (now 4.99×10^{-4} atm-m³/mol) for 2-Methylnaphthalene.
3. The proposed standard is based on the direct contact standard (Table 5) as the leaching-to-groundwater pathway results in a higher soil concentration.
4. Coincidentally, the leaching-to-groundwater based value is approximately equal to the Table 5 direct contact value.
5. A rounding error is corrected.

Changes to MCP Table 4 - 310 CMR 40.0975(6)(c)

Oil or Hazardous Material	Old		New		Old		New		Old		New	
	S-3/GW-1	µg/g	S-3/GW-1	µg/g	S-3/GW-2	µg/g	S-3/GW-2	µg/g	S-3/GW-3	µg/g	S-3/GW-3	µg/g
Methylnaphthalene, 2-	0.7		4 ^{1,2}		20		2,000 ^{2,3}		7		1,000 ^{1,2,4}	
TOTAL PETROLEUM HYDROCARBON	No Change (5,000)		No Change (5,000)		No Change (5,000)		No Change (5,000)		No Change (5,000)		No Change (5,000)	
C ₅ through C ₈ Aliphatic Hydrocarbons	-		500 ³		-		500 ³		-		500 ³	
C ₉ through C ₁₂ Aliphatic Hydrocarbons	-		500 ³		-		500 ³		-		500 ³	
C ₉ through C ₁₈ Aliphatic Hydrocarbons	-		5,000 ³		-		5,000 ³		-		5,000 ³	
C ₁₉ through C ₃₆ Aliphatic Hydrocarbons	-		5,000 ³		-		5,000 ³		-		5,000 ³	
C ₉ through C ₁₀ Aromatic Hydrocarbons	-		500 ³		-		500 ³		-		500 ³	
C ₁₁ through C ₂₂ Aromatic Hydrocarbons	-		2,000 ^{1,4}		-		5,000 ³		-		5,000 ³	
Vinyl Chloride	No Changes				0.3		0.4 ⁵		No Changes			

1. The proposed standard is based upon leaching-to-groundwater pathway which results in a more stringent (lower) than the direct contact standard (Table 5).
2. The change is due to a revised Henry's Constant (now 4.99×10^{-4} atm-m³/mol) for 2-Methylnaphthalene.
3. The proposed standard is based on the direct contact standard (Table 5) as the leaching-to-groundwater pathway results in a higher soil concentration.
4. Coincidentally, the leaching-to-groundwater based value of 1,700 mg/kg is approximately equal to the Table 5 direct contact value.
5. A rounding error is corrected.

Changes to MCP Table 5 - 310 CMR 40.0985(6)

Oil or Hazardous Material		Old	New	Old	New	Old	New
		µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
Methylnaphthalene, 2-		1,000	500 ^{1,2}	2,500	1000 ^{1,2}	2,500	2,000 ^{1,3}
TOTAL PETROLEUM HYDROCARBON		No Change (500)		No Change (2,500)		No Change (5,000)	
C ₅ through C ₈ Aliphatic Hydrocarbons		-	100 ²	-	500 ²	-	500 ²
C ₉ through C ₁₂ Aliphatic Hydrocarbons		-	100 ²	-	500 ²	-	500 ²
C ₉ through C ₁₈ Aliphatic Hydrocarbons		-	1,000 ²	-	2,500 ²	-	5,000 ²
C ₁₉ through C ₃₆ Aliphatic Hydrocarbons		-	2,500 ²	-	5,000 ²	-	5,000 ²
C ₉ through C ₁₀ Aromatic Hydrocarbons		-	100 ²	-	500 ²	-	500 ²
C ₁₁ through C ₂₂ Aromatic Hydrocarbons		-	800 ³	-	2,000 ³	-	5,000 ²
Vinyl Chloride		No Change		No Change		No Change	

1. The change in the standards for 2-Methylnaphthalene is based upon a revised Henry's Law Constant (now 4.99×10^{-4} atm-m³/mol) and Vapor Pressure (0.068 Torr 20-30 C).
2. The proposed standard is based upon the applicable Ceiling Concentration.
3. The proposed standard is risk-based.

Changes to MCP Table 6 - 310 CMR 40.0996(5)					
Oil or Hazardous Material	Old UCL in Groundwater µg/L	New UCL in Groundwater µg/L	Old UCL in Soil µg/g	New UCL in Soil µg/g	
Methylnaphthalene, 2-	No Change	No Change	No Change	No Change	
TOTAL PETROLEUM HYDROCARBON	100,000	30,000 ^{1,4}	No Change (10,000)		
C ₅ through C ₈ Aliphatic Hydrocarbons	-	100,000 ^{2,4}	-	5000 ^{2,4}	
C ₉ through C ₁₂ Aliphatic Hydrocarbons	-	100,000 ^{2,4}	-	5000 ^{2,4}	
C ₉ through C ₁₈ Aliphatic Hydrocarbons	-	100,000 ^{2,4}	-	20000 ^{2,4}	
C ₁₉ through C ₃₆ Aliphatic Hydrocarbons	-	10,000 ^{2,4}	-	20000 ^{2,4}	
C ₉ through C ₁₀ Aromatic Hydrocarbons	-	40,000 ^{2,4}	-	5000 ^{2,4}	
C ₁₁ through C ₂₂ Aromatic Hydrocarbons	-	90,000 ^{2,4}	-	10000 ^{2,4}	
Vinyl Chloride	600	100,000 ^{3,4}	No Change		

1. The new Groundwater UCL for traditional TPH measures used as a conservative screening tool is based 10 times the highest Method 1 groundwater standard for TPH, per the standard protocol.
2. The UCLs for the Hydrocarbon Fractions have been set using the standard protocol, except for the C₉ through C₁₈ and C₁₉ through C₃₆ Aliphatic Hydrocarbons soil UCLs, which have been set at 20,000 µg/g per the May 1996 Discussion Paper.
3. The new UCL for Vinyl Chloride results from a correction in the solubility value assigned to this chemical. The derivation of the 100,000 µg/L value follows standard protocol.
4. The 1994 *Background Documentation for the Development of the MCP Numerical Standards* outlines the standard protocol used to set UCLs. The UCLs are *generally* a simple 10 fold multiple of the highest exposure-related standard, capped at a maximum concentration of 10,000 µg/gram (or 1%) in soil and 100,000 µg/L (or 0.01 %) in groundwater. Other factors, such as solubility concerns and other risk management considerations may also be considered on a chemical-by-chemical basis.

Changes to MCP Reportable Concentrations - 310 CMR 40.1600									
Oil or Hazardous Material	Old RCGW-1 mg/L	New RCGW-1 mg/L	Old RCGW-2 mg/L	New RCGW-2 mg/L	Old RCS-1 mg/kg	New RCS-1 mg/kg	Old RCS-2 mg/kg	New RCS-2 mg/kg	
Methylnaphthalene, 2-	No Change	No Change	No Change	No Change	0.7	4	7	1,000	
TOTAL PETROLEUM HYDROCARBON									
C ₅ through C ₈ Aliphatic Hydrocarbons	-	0.02	-	.02	-	100	-	500	
C ₉ through C ₁₂ Aliphatic Hydrocarbons	-	0.1	-	0.1	-	100	-	500	
C ₉ through C ₁₈ Aliphatic Hydrocarbons	-	0.08	-	0.08	-	1,000	-	2,500	
C ₁₀ through C ₃₆ Aliphatic Hydrocarbons	-	1	-	1	-	2,500	-	5,000	
C ₉ through C ₁₀ Aromatic Hydrocarbons	-	0.1	-	0.1	-	100	-	500	
C ₁₁ through C ₂₂ Aromatic Hydrocarbons	-	0.2	-	3	-	800	-	2,000	
Vinyl Chloride	No Change	No Change	No Change	No Change	No Change	No Change	0.3	0.4	

The calculation of Reportable Concentrations follows the standard protocol described in Appendix E of *Background Documentation for the Development of the MCP Numerical Standards* (May 1994). Briefly:

- RCGW-1 values are the *lowest* of the Method 1 GW-1, GW-2 and GW-3 standards for a chemical.
- RCGW-2 values are the *lowest* of the Method 1 GW-2 and GW-3 standards for a chemical.
- RCS-1 values are the *lowest* of the Method 1 S-1/GW-1, S-1/GW-2, S-1/GW-3, S-2/GW-1 and S-3/GW-1 standards for a chemical.
- RCS-2 values are the *lowest* of the Method 1 S-2/GW-2, S-2/GW-3, S-3/GW-2 and S-3/GW-3 standards for a chemical.